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**STEP Events, Walks and Talks:** Check our web site [www.step.org.au](http://www.step.org.au) for details of any changes

## Inaugural STEP Public Lecture: 'Saving civilisation is not a spectator sport'

STEP Inc is delighted to announce that Pepe Clarke, CEO of the Nature Conservation Council of New South Wales, has agreed to be the speaker at our inaugural STEP Public Lecture on 11 October 2011. The Lecture will launch the latest STEP publication, our 2011 *Position Paper on Population*. A copy of the new STEP publication will be sent to all members.

STEP is a steadfastly non political community based group which prides itself on its record of environmental education and protection, and on its questioning of conventional wisdom. Urban environmentalism is much more than fighting against the loss of natural areas. It is

essential to look many decades ahead and to educate and inspire the community to appreciate what we have if the battle against the unthinking and destroyers is to be won.

The growth in global population is a key challenge now facing all countries, including Australia. Natural areas may be maintained by regeneration and maintenance but they can only be saved if they are not lost, piece by piece, to our ever increasing need for housing, schools, roads, playing fields, hospitals and all the other developments our governments are imposing upon us.

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## STEP AGM – Tuesday 11 October 2010 – Call for Committee Nominations

7.45 pm – St Andrews Church Hall, corner Chisholm and Vernon Streets, Turramurra

The STEP Inc Annual General Meeting will be held at 7.45pm and will be completed prior to the inaugural STEP Lecture by NCC CEO Pepe Clarke. (See above) Nominations for Office Bearer or Committee Member should be made in writing and received by the Secretary at least seven days prior to the meeting. Nomination forms are available from the Secretary (email: [secretary@step.org.au](mailto:secretary@step.org.au)).

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## Sunday, 25 September: *A Walk on the North Side... North Head history and ecology*

### Festival of Nature Walk in conjunction with the Nature Conservation Council

North Head has sometimes been described as an "island", and although it has never been one, it certainly has many of the characteristics of an island. North Head packs in a lot of geological, biological, aboriginal and European history. The walk, to be led by Geoff Lambert, takes us over a small portion of North Head, mostly through parts of what was once the School of Artillery, plus parts of the present National Park.

**Time:** 10 a.m. for 10.15 departure

**Meet:** North Head, Manly. From Manly follow Darley Road onto Scenic Drive. Turn left off Scenic Drive at the North Head Sanctuary sign. Parking is available on site. (Or take bus 135 from Manly Wharf to the bus stop near North Head Sanctuary entrance).

**Length:** Approximately 3 hours

**Difficulty:** Moderate

**Book:** By contacting Tim Gastineau-Hills on 0419 251 586 or [tghills@yahoo.com](mailto:tghills@yahoo.com)

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**See pages 15 and 16 for the October and November walk details**

## Key Issues and Updates

Barry Tomkinson provides a summary of recent STEP activities

### Lane Cove National Park

**Plan of Management:** STEP members must at times wonder at the apparent lack of progress made on key environmental matters. One of these is the Plan of Management (PoM) for Lane Cove National Park. Readers would recall that the latest (already delayed) Plan of Management for LCNP was expected to be completed in 2010. We were then informed that it had been further delayed but it was expected it would go out on public exhibition by mid 2011. The latest news is that there is now a draft which has been forwarded to the Department for approval, but that there is still no specific date as to when it will go on public exhibition. We can but wait and hope.

STEP will be awaiting the PoM with interest, as we have raised a number of key planning matters with LCNP. These include:

- Future levels of funding for the area, which seems to have suffered a significant reduction in funding available for maintenance and rehabilitation work.
- Track and trail policy. STEP supports well constructed tracks and trails for both walkers and cyclists, but only in appropriate areas as laid out in our 2010 *Position Paper on Bushland Tracks and Trails*. Illegal mountain bike trails in sensitive areas of the Park are causing significant damage and an

effective policy to deal with these thoughtless riders needs to be developed and enforced.

- Control of nutrients into the bushland. As laid out in the June 2010 edition of this newsletter, STEP believes that there are better ways to deal with the build up of toxic phosphorous levels in our ecosystems, caused by water borne nutrients entering the bushland.

**Park budget reduction:** The *Monthly Chronicle* reported in its last edition that the latest budget for the Lane Cove National Park had been further cut and that, as a result, there was now no funding whatsoever for bush regeneration programmes, plus significant cuts to basic maintenance and operational services. Long running regeneration programmes are now under threat, with the gains made over recent years put at risk. Prior to the recent State election, STEP members were assured by local Liberal candidates that bush regeneration funding would be maintained. STEP will be taking up this matter with those concerned but STEP members may also want to drop their local MP's a note to encourage them to restore the funding and to maintain it at levels that will allow it to be effectively employed. As one source within the NPWS remarked "our well trained rangers will left to be used as the most expensive toilet and BBQ cleaners in Sydney!"

### Ku-ring-gai

**Golden Jubilee Field:** This field sits atop a former garbage tip on a northern ridge line in Wahroonga. The land has been rehabilitated as sports fields and as a playground. STEP has been involved in the proposal to establish a mountain bike facility on the site and has conducted a number of site visits to the area. Much of the area is severely degraded and with no threatened species noted. As a result, we were supportive of the proposed development, which will basically contain an off road cycling facility adjacent to the fire trail. STEP has however written to Ku-ring-gai Municipal Council (KMC) indicating the danger that any future demands for an expanded site to form part of a wider regional network of mountain bike trails would result in great loss of biodiversity and natural values. Construction of the new facility was due to commence in June 2011.

**St Ives Showground and Precinct Lands:** Another very slow development! STEP has been part of a long running community consultation process set up by KMC to help establish a long term plan for the future use of the St Ives Showground area. The Draft Options which emerged from this process were approved by KMC in June 2010 and we were advised that KMC would appoint a consultant to draw up a Plan of Management by no later than June 2011. A draft is now said to be expected only "sometime in August". STEP has been assured by KMC that its concerns about the future level of protection to be offered to the Duffy's Forest vegetation community, as a result of the proposed location of road works and the creation of a wide sealed cycle track system through this sensitive area, have been conveyed to the consultant.

In our view, some of the current draft proposals constitute Key Threatening Processes to the Duffy's Forest community. We await the Plan of Management with interest.

**Integrated Transport Strategy:** The last issue of STEP Matters contained the STEP submission on Ku-ring-gai Council's Draft Integrated Transport Study (ITS). We thought that our comments were thoughtful and constructive, as were many of the comments from the 23 other interest groups and transport stakeholders received by KMC. Clearly however, the team of strategists within Council who were charged with considering the submissions were unimpressed. Their summary position was simple: "the ITS would require no change" as the "majority of issues raised in the submissions would be addressed directly or indirectly by the actions of the ITS".

It is obvious from their responses to individual comments that they either did not understand, or choose to ignore, the thrust of many of the comments made. For example, they seem to understand the term "sustainable" as meaning "reducing the need to travel ... and making it safe for people to access goods and services" rather than the commonly accepted view that it refers to a situation where the proposed actions don't downgrade the opportunities or environment for future generations. Suggestions to consider a "community based taxi scheme", as sometimes used overseas, are dismissed as being "unlikely to succeed", without any evidence of how they arrived at such a conclusion. As to STEP pointing out that proposals for mountain bike trails had almost nothing to do with road cycling, the reply was that

“mountain bike trails are considered important in that they help to build confidence for bicycle riders”.

Council at its meeting of 28 June adopted the draft report with only the following important changes: “reference to

#### **Site visits and submissions**

STEP Committee members have been involved in visits and submissions to local authorities at a number of sites, including: Koola Park Killara and Ashmore Avenue Pymble. In the case of Koola Park, STEP committee member Dr Andrew Little has been working

### **Hornsby**

**Mountain Bike Facility:** STEP has been an active participant in the mountain biking debate over the past three years. No where has this debate been more vocal than in Hornsby Shire, where STEP representatives spoke at Council meeting in December 2009 which had been asked to consider allowing four mountain bike trails to run through the pristine bushland of the Dogpound Creek diatreme. Since that time STEP has sought to lead a community debate on the matter, so as to arrive at a long term sensible policy that tries to meet all legitimate user needs while still protecting the remaining natural bushland in our area. STEP's 2010 *Position Paper on Bushland Tracks and Trails* sets out our position and has subsequently been widely endorsed by

‘Transport NSW’ amended to ‘RTA’ (etc)”. One wonders what is the point of Council asking for detailed community submissions if it is going to treat their contents with so little respect.

with local residents to classify the soils and vegetation and it appears that Council will be recommending a re-alignment of the natural area near the car park. A great first step!

other bodies, including the Nature Conservation Council of NSW.

The STEP Committee was therefore pleased to have Hornsby's Bushland Coordinator, Anthony Newling, take us through the plans for a 5.5 km cross country mountain bike facility in the Hornsby Park/Old Mans Valley area. The bushland in the area is substantially degraded and cleared and therefore largely meets the recommendations set out in the STEP Paper for the location of such trails. It is STEP's hope that the establishment of such a trail will reduce the pressure for other trails in good quality bushland areas, and also remove the need for thoughtless mountain bikers to develop illegal trails in high conservation areas.

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## **Is plant ecology more siliceous than we realise?**

*Step member, Julia Cooke has submitted her PhD thesis and we bring you a summary*

*“It is remarkable that the two elements, silicon and carbon, which resemble each other in so many respects, should play such different roles in living things. Even though silicon is one of the most abundant elements, it is generally considered to be non-essential in most living organisms, while carbon, which is far less plentiful, is the primary element upon which all life depends.”*

- Ralph K. Iler, 1955.

*“There is no justification for the disregard of silicon in so much of the science of plant physiology. The evidence is overwhelming that in the real world of plant life, silicon matters”*

- Emanuel Epstein, 1999

Did you know that all plants contain silicon? It isn't usually the first thing people associate with plants and despite its ubiquitous presence; it remains an element largely overlooked by plant ecologists. I began my PhD thesis reviewing from an ecological perspective what we know about plant silicon, arguing that plant ecology is more siliceous than many realise. There is increasing evidence for the importance of silicon for plants. I then explored the role of silicon in leaf strategies, stress alleviation, herbivory and biomechanical resistance.

Silicon cycles between plants and their environment (with up to 75 kg Silicon ha<sup>-1</sup> yr<sup>-1</sup> recycled). Plants take up silicon as silicic acid (Si(OH)<sub>4</sub>.nH<sub>2</sub>O, a liquid) and deposit it as amorphous silica (SiO<sub>2</sub>, a solid). Silica can be deposited as fragile incrustations in cells but also as more robust, discrete bodies, known as phytoliths, which form in many shapes and sizes. These shapes are often characteristic of a species, genus or plant family. When plants die and decompose, the silicon can persist for longer than the organic components, making phytoliths a useful tool for archaeologists and palaeontologists. They can use

these to recreate past lifestyles and environments by using phytoliths to identify co-occurring species and track crop domestication.

The accumulation of silica among species varies, with some plants containing only trace amounts, whereas in others, such as rice (*Oryza sativa*), silicon constitutes up to 10% of plant dry mass. As examples, ferns have very low silica concentrations, very high concentrations are found in horsetails (*Equisetum* sp.), and there are consistently high accumulating families such as the Poaceae (grasses). More locally, the Sydney turpentine (*Syncarpia glomulifera*) is known for the high silicon concentration in its wood and many sedges and grasses, such as Blady grass (*Imperata cylindrica*), have high silicon concentrations. The amount of silicon in a plant is also dependent on the amount of silicic acid available in the soil. Silicic acid concentration varies with soil type and changes throughout the year.

Until recently, much plant-related research on silicon came from agronomy, archaeology, palaeontology and biogeochemistry. The best studied functions of silicon are from agricultural studies conducted on

domesticated plants, where silicon provides significant relief from a range of stresses, including heavy metal toxicity, nutrient imbalances, salinity, heat and water stress, and herbivore damage. Consequently, silicon fertiliser is applied routinely in many crops (rice and sugar cane especially) to improve plant growth by alleviating stress. Silicon can alleviate stress impacts through a range of mechanisms, including the increased production of anti-oxidants, binding and co-precipitating with metal ions, immobilisation of metal ions in the soil, and modification of element uptake processes. Silica in plants (in the leaves, wood and seed coats) protects plants from mammal and insect herbivores. It inflicts wear on mouthparts, and reduces palatability and digestibility.

Across the plant kingdom, plants have evolved many different strategies to cope with the environmental stresses plants encounter. Leaves form part of these strategies and there is a spectrum that runs from fast-return species that are characterised by cheaply constructed leaves that don't last for long (with high nitrogen and phosphorus concentrations, high photosynthetic rates and short leaf life spans) to slow-return species with leaves that are more expensive to make but last for longer (sometimes several years). My research showed that shorter lived leaves have high concentrations of silicon, while leaves that persist on plants for a long time have low concentrations of silicon. Silicon is less versatile than carbon (it doesn't form the many varied complex molecules that carbon does), but doesn't cost as much for plants to acquire. I suggest that silicon could be a cheap building material that is useful in shorter lived leaves, allowing a more carbon to be allocated to growth and reproduction. The lack of versatility of silicon makes it less beneficial for long lived leaves.

Silicon is used in agriculture to alleviate the impacts of a broad range of plant stresses. There are now hundreds of experiments testing the effect of silicon on stressed agricultural plants with most studies examining one species and one stress. I combined the results of many experiments (in a meta-analysis) to see if there were patterns across stresses and species. I showed that responses (such as anti-oxidant production and element accumulation which help alleviate the stress) were consistent across species and that responses were bigger in species that accumulate more silicon. These results suggest that silicon may be very important for all plants subjected to drought, saline soils, heavy metals and nutrient imbalances, but as yet there has been no research on natural systems, and we have no idea how important silicon is to help plants cope with stress in nature. Intriguing, isn't it?

There is also little understanding about how important silicon is to plant communities (rather than to a single species). I investigated the amount and role of

plant silicon at a community level by comparing leaf silicon concentration with herbivore defence chemicals, structural carbon compound concentrations (lignin, cellulose etc) and insect abundance and diversity in vegetation communities from two different soil types with contrasting levels of plant available silicon. This work was carried out in Ku-ring-gai National Park comparing Hawkesbury Sandstone Vegetation (sandstone derived soils have low plant available silicon, despite being sandy) and Diatrema Forest (on soils with higher levels of plant available silicon). Surprisingly I found that the concentrations of silicon in the leaves did not reflect the silicon availability in the soil at a community level (i.e. just because there is more silicon available in the diatrema soils didn't mean the vegetation growing there had higher silica levels), suggesting that the species rather than the environment determine leaf silica concentration (i.e. grasses always had high silica concentrations regardless of soil type). I found that plants that had high amounts of phenols and tannins (chemical defence against herbivores) had lower levels of silica and vice versa. It seems plants either invest heavily in chemical defences or silica, with some investing in a bit (but not a lot) of both. Beetle (Coleopteran) abundance was lowest on species with high silicon concentrations – perhaps beetle mouthparts struggle to chew through silicon?

Silicon has been suggested to be a useful structural component in plants, but there is little evidence of silica affecting leaves mechanically. I tested the effect of different silica concentrations on the leaf biomechanical properties (stiffness, strength and toughness) of ten Australian pasture grass species. Higher leaf silica concentration increased leaf density and made leaves less stiff (i.e. more stretchy), but did not effect toughness or strength. The increased density may reflect a cost to high silicon accumulating grasses as the stems must support denser leaves but the decreased leaf stiffness may benefit plants by increasing the amount of time herbivores must invest to eat the grass.

My findings confirm that silicon has many roles in plants, and that is likely to be important in natural systems, not just in agriculture. The findings in this thesis, together with a growing body of research on plant silicon, provides a compelling argument that silicon is important as an anti-herbivore defence and alleviator of many abiotic stresses, but also to provide more favourable carbon use in plants. Plant physiologist John Raven wrote in 2003 that silicon in plants "still presents an enigma". There is still much research to be carried out on plant silicon to understand the range of functions of silicon in plants, the mechanisms involved and the costs and benefits of silicon use, but this research contributes a little more to solving that enigma.

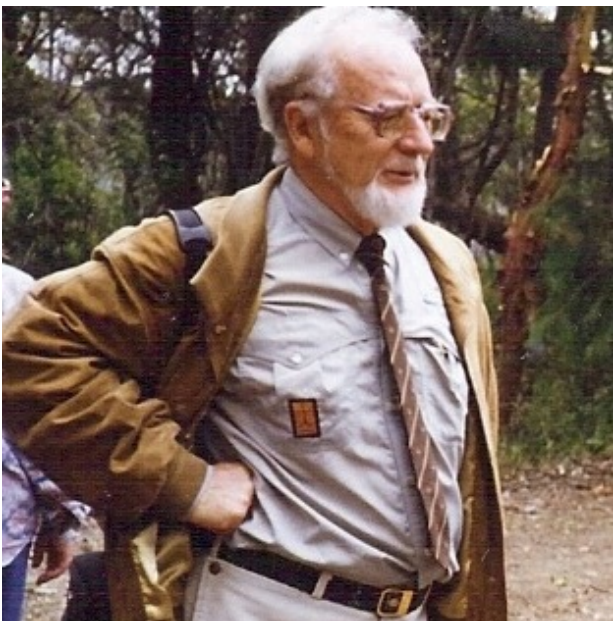
*Julia recently submitted her PhD thesis entitled 'The Functional Ecology of Plant Silicon', at Macquarie University. She was supervised by Assoc. Prof. Michelle Leishman and her thesis is currently under examination. The papers below are published chapters from the thesis. They provide a source of further information. For more information contact Julia on: cooke.julia@gmail.com*

Cooke, J. and Leishman, M.R. (2011) Is plant ecology more siliceous than we realise? Trends in Plant Sciences 16(2):61-68 DOI: 10.1016/j.tplants.2010.10.003

Cooke, J. and Leishman, MR. (in press, early view online) Silicon concentration and leaf longevity: is silicon a player in the leaf dry mass spectrum? Functional Ecology DOI: 10.1111/j.1365-2435.2011.01880.x

## Why Berowra Valley Regional Park should be a National Park

*Bob Salt, an acknowledged expert on the Berowra Valley bushland, explains why there should be a national park. Bob has been an active member of a number of local conservation groups over the last fifty years. These include Hornsby Conservation Society, Friends of Berowra Valley and the Association for Berowra Creek. He has served on numerous Committees - for example, the NPWS Sydney North Advisory Committee. In addition to his Mechanical engineering qualifications Bob has a BSc in Earth Science. Bob was recently awarded the Medal of the Order of Australia (OAM) for services to conservation and the environment.*



The classification of Parks in NSW has often been a matter of political expediency rather than satisfying criteria for a particular classification. Parks have also changed classification as their increasing values have been recognised. For example, the Royal National Park and Ku-ring-gai Chase Park were originally conceived as public pleasure grounds which allowed a wide range of recreational and hunting pursuits, the introduction of exotic fauna and flora, and even military exercises. It was later recognised that these activities were not compatible with the long term future of the park or sustainable public enjoyment of the park's features.

The Berowra Valley Regional Park (BVRP) has grown out of the early desire to protect native fauna and flora when it was generally unrecognised that existing protection was insufficient and that species' survival depended on habitat. Thus the forerunner of the BVRP – the Elouera Bushland Natural Park – was dedicated as a result of local conservationists' desire in the 1950's to protect the lyrebird population. Hornsby Conservation Society lobbied for an area of bushland on the headwaters of Berowra Creek which at that time was not attractive to developers and had been reserved pending survey by the Lands Department.

In 1964 the then Minister for Lands the Hon. TL Lewis MLA reserved the Elouera Bushland Natural Park and appointed a Trust led by the Hon Max Ruddock MLA to manage an area stretching from Boundary Road Pennant Hills to just north of Hornsby Rifle Range covering some 640ha. This increased by 40.5ha in 1967 when noted botanist Dr Joyce Vickery M.B.E. donated 100 acres of her own land at Joe's Mountain, Old Man Valley Hornsby for inclusion in the Park.

These areas, including some Crown Land, were linked by the *Benowie* track, constructed in 1980 as a joint project by the Lands Dept, Hornsby Council and the Trust with assistance from local service clubs. It went from Thornleigh to Berowra Waters mainly along Berowra Creek. The Elouera Bushland Natural Park Trust in 1983 produced a Plan of Management with a companion Guide for the Park, with assistance from Thornleigh Rotary Club. The Guide proved to be a very popular document and quickly sold out the first edition and was reprinted in 1984. Two years later in 1986 a Bicentennial project was proposed by bushwalkers Gary Mc Dougall and Leigh Shearer Heriot. This led to the construction of a walking track from Sydney to Newcastle incorporating the *Benowie* track into the newly created Great North Walk.

The Walks' popularity increased awareness of the local bushland's attractions. Representations from the Elouera Bushland Trust and local and peak conservation bodies led to most of the surrounding Crown bushland north of the Hornsby Rifle Range being added to the Elouera Bushland Park to form the Berowra Bushland Park, a Lands Department Park with Hornsby Council as Trustees in 1988.

In 1996 the Hon Bob Carr in the Labor Party's manifesto suggested that a Berowra Valley National Park should be incorporated in the proposals for new parks in the next session of Parliament. The existing Berowra Valley Park was incorporated into the new Berowra Valley Regional Park in 1998 (not a national park). The new park contained more than 3800 ha of catchment bushland stretching down Berowra Creek. It was to be managed by a Trust responsible to the Minister for the Environment. The Trust comprised representatives of The National Parks and Wildlife Service, the Community and the Shire Council which had the balance of power.

BVRP was now much larger and more diverse than many National Parks in the Sydney Region at 3830 ha compared to Cattai N.P. 335ha, Sydney Harbour 393ha, Botany Bay 458ha, Lane Cove 600ha, Wyrribalong 620ha, and Scheyville 920ha.

The concept of Regional Parks was new and unfortunately most of the other Regional Parks created were smaller areas based on land which had been substantially altered since European settlement. These areas were well suited to playgrounds, bike trails and sports fields and activities such as leashed dog walking, equestrian events, horse riding and bicycle sports not generally permitted in the NSW Parks system categories but permitted in regional parks.

As a consequence proposals to establish sports fields at areas such as Stringybark Ridge, more dog walking and horse riding trails along service tracks were promoted by various groups. Construction of illegal BMX bike and dirt

bike tracks became a problem. The Trust became untenable particularly as it became evident Council was unable to inject significant funds into the Park and was seeking a Government Grant of over \$400,000 per annum. Examination of the Trust Reports and Financial Statements for the 3 years to 2003 showed that the Trust's income of \$541,947.99 was derived from Ministerial and Government Grants and lease payments. The Council's documented expenditure had all been recouped from the Trust Accounts. The Government was in fact funding the park just as if it were a National Park.

The BVRP is rich in diversity. As documented in the *Guide to the Berowra Valley Regional Park* produced by the Friends in 2001 it contains 18 vegetation communities, two of which are classed as critically endangered or endangered under Commonwealth and State Threatened Species Legislation. There are also 10 threatened flora species and many regionally and locally significant species. Over 230 vertebrate species, including 12 threatened species, have now been recorded in the park, ranging from Powerful Owls (*Ninox strenuosa*) to Dunnarts (*Sminthopsis murina*). Not only does it deserve to be a National Park but it should be extended to include the 14ha remnant of Blue Gum High Forest on Diatreme soils in adjacent areas. This is probably the last of this

vegetation community in the Sydney Region, yet only a small fraction of this community is within the BVRP.

This information together with its rich Aboriginal and European heritage documented in *The Guide to Berowra Valley Regional Park* and by Ian Cohen in Parliament's *Hansard* clearly demonstrate that this should be classified as a National Park. This proposition has been supported by both local and major State Conservation Groups.



Photo: Bob Salt

#### References

- Steele Jeremy Ed. (2001) *A Guide to Berowra Valley Regional Park*, the Friends of BVRP Sydney NSW Dept of Environment and Conservation (2005) *Plan of Management Berowra Valley Regional Park*. NSW NP&WS, Sydney  
 NSW Legislative Council (2003) *Hansard* June 25 2003 Art No 56&57 Pp 88-89, Sydney  
 Mitchell James Ed. (1984) *A Guide to Elouera Bushland Natural Park*, The Trust of EBNP, Sydney

### Helen Preston gets a gong

Former STEP president and formidable environmentalist, Helen Preston (formerly Petersen) was awarded an OAM in the Queen's Birthday 2011 Honours List. We wrote about Helen's role in STEP and elsewhere in STEP Matters No 152. (See [http://www.step.org.au/downloads/newsletter\\_152.pdf](http://www.step.org.au/downloads/newsletter_152.pdf)).

Congratulations Helen!



### The STEP Committee

Barry Tomkinson – President  
 Stephen Procter – Treasurer  
 Helen Wortham – Secretary

John Burke – Vice president  
 Andrew Little  
 Tim Gastineau-Hills  
 John Martyn

Robin Buchanan  
 Don Davidson  
 Jill Green

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](mailto:secretary@step.org.au). The STEP Committee does not necessarily agree with all opinions put forward in this newsletter.

## Letters to the editor

Whenever **Noela or Bill Jones** speak, we listen! We have the following letter from Noela in response to our April article on bushfire hazard reduction by selective hand clearing (SHC).

### Selective hand clearing not an option?

As a Bush Regenerator for many years I would like to comment on the STEP Matters April 2011 article on SHC.

I am aware that STEP has been promoting this method of hazard reduction for 30 years but have not personally been involved in it or witnessed any areas where it has been carried out. The article states "The success of the volunteer bush regeneration program means that the community can be mobilised to carry out much of this work ... and Council could employ professional regenerators in some cases"

Sadly, there is not the same enthusiasm for bush regeneration in the community as there was 17 years ago when many people were keen to join following the 1994 fires. A Council officer recently stated that the program had reached a plateau 5 years ago and that volunteers were interested in different things such as community gardens, WildThings, Parkcare and Streetcare. This has also been my observation. A recent Bushcare Open Day had to be cancelled because no one turned up.

The situation is the same for the Lane Cove National Park Bushcare Program where numbers are falling away. At the 15 year celebration of the program in 2009, participants were jokingly saying that another fire like the

### Editor comment.

*The lack of volunteer regenerators is obviously a problem at the moment but we also recommend selective hand clearing as a method to be used by councils and other authorities. While we all prefer to never disturb a native plant, if the alternative is too frequent burning or the insensitive firebreak clearing*

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**Mary Hazelton** wrote to us to support Irene Timmins' concerns about our recommendation regarding setbacks from houses under Ku-ring-gai's Tree Preservation Order (see Step Matters No 160). She wrote,

### TPO setback proposal opposed

'If the TPO is revised to 8 metres in bushfire prone areas the North Shore will lose any semblance of maintaining meaningful critical habitat for indigenous wildlife. After

### Editor comment.

*One problem with the current 3 metre setback that we didn't mention previously is that these trees are allowed to be pruned where they overhang houses and this can result in unbalanced and dangerous trees. Our primary concern, however, is that a major fire event with wildfire sweeping through Garigal or Lane Cove National Parks could destroy many homes and cause multiple deaths. If that were to happen the community reaction could do*

1994 fire was needed to stimulate interest again!

I am, therefore, not optimistic that there would be enough volunteers to carry out such labour intensive work as SHC or that Council would support it. Council does not seem to have the resources to carry on the work of the groups that are losing numbers.

Most regenerators I know are flat out weeding their sites with diminished numbers and would not have the time to undertake SHC. Personally, I would not want to remove native plants and I am sure there are many who would feel the same.

Suggesting SHC is a "golden opportunity to attract more people into the field" is not an ideal way to instill a love of bushland. It is, in effect, not bush regeneration and may divert precious resources away from existing and prospective bush regeneration programs.

Sorry to be negative but I DO appreciate the great work undertaken by members of the Committee in looking after our environment.

Noela Jones

*done by councils and others then we still reckon that selective hand clearing, done by trained people, is a much to be preferred alternative. The question surely is - if the fuel load must be reduced, what is the best way to do it in the interests of the ecosystem present?*

all, with Ku-ring-gai becoming overcrowded (3,000 + people gain p.a.) there will soon be bushfire prone areas near you with trees to be felled!

*great damage to our bushland by mandating huge cleared and mown setbacks and the like. The result would be an environmental disaster.*

*Scientists are predicting that weather events will become more extreme as global warming progresses and this seems to be borne out by happenings around the world. Wildfire is one of those events. So we see the recommendation as fitting the dictates of the precautionary principal and being in the best long-term interests of our bushland.*

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## Member views

We are sorry that we cannot completely agree with every member. This is understandable as many issues are not clear-cut. We shall always, however publish reasoned views in an endeavour to promote discussion and better mutual understanding. Please keep the letters coming.

Member **Gerry Cull** wrote to us enclosing a copy of Elizabeth Farrelly's article in the Sydney Morning Herald of May 26 *Full steam ahead to oblivion*. This is a great strident article on with the urgency of dealing with climate change and the pathetic response of industry and politicians. Here's a sample.

Entitlement be damned. Hydrocarbons gave us modernity, didn't they? They gave us internal combustion, plastics, fertilisers, moon rockets, electric toothbrushes, bubble bath. Many things set modernity apart but the most dramatic is the sudden ubiquity of the carbon-hydrogen chain.

Since then humans have so changed the world that science has renamed our geological era. What was the Holocene, beginning 12,000 years ago, has ceded to the Anthropocene, thought by many to have begun in 1800, when our species first hit 1 billion. Most of this change - mass agriculture, urban sprawl, deforestation, aviation - is via hydrocarbons. It was also in 1800 when atmospheric carbon dioxide from fossil fuels started

significantly to rise. And it wasn't just the mummies. Hydrocarbons are everywhere. Even without climate change, which every week looks more urgent than we thought, they have shaped our cities and our countryside, infiltrating our soils, our food chain, our bodies.

We're facing the sixth mass extinction in history, the only one caused by an implicated species, and a good part of it is down to hydrocarbons.

It's not just climate change, either. There's also habitat loss and straight old poisoning. On Lord Howe Island, the shearwaters are dying by the hundred with stomachs full of plastic. The London sparrow is all but gone, and studies blame diesel particulates, to which everyone switched for cost and climate reasons.

Read the full article at: <http://www.smh.com.au/opinion/politics/full-steam-ahead-to-oblivion-20110525-1f4bs.html#ixzz1TpJKhasO>

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## Pindone as rabbit poison

*STEP member, Dr Gerda Cohen, wrote to Ku-ring-gai Council on 10 July as follows*

Dear Mayor Cross,

I wish to express my concern about the use of Pindone as rabbit bait. **Pindone** is an anticoagulant, which is non-specific to rabbits. It will kill possums, wallabies, bandicoots, antechinus and of course birds, including owls, which eat rabbit carcasses. (see attached) The RSPCA does not condone the use of Pindone and does not consider it an acceptable control method, as affected rabbits take several days to die."

Even if we accept cruelty to rabbits (and foxes), do we also accept cruelty to and death of our native animals? And will Council staff administer Vitamin K1 to wallabies,

possums and owls?

Since the baits will be laid out at night, this is of course precisely when our native animals feed, thus ensuring that many will suffer and die. Moreover, the relevant notice appeared in the North Shore Times on 1<sup>st</sup> July 2011, and the baiting programme was due to commence three days later, leaving resident very little time to object. I wish therefore to recommend that the baiting programme be suspended immediately, while other, more environmentally acceptable and humane methods are considered.

Dr. Gerda M. Cohen, B. Vet. Med., M.Sc.

STEP sought an opinion from another Sydney veterinarian who agrees with Gerda. He said, 'Pindone is what's called a second generation rodenticide. It has a longer life and is more potent than newer drugs. It causes death via the animal bleeding to death and is considered to be a very cruel choice of toxin. It has no species preference and it is well documented that it is very lethal to all bird species. There is no doubt that using it to bait rabbits will result in the death of natives.' The RSPCA concurs. It has posted on line at [http://kb.rspca.org.au/What-is-the-most-humane-way-to-control-wild-rabbits\\_381.html](http://kb.rspca.org.au/What-is-the-most-humane-way-to-control-wild-rabbits_381.html) an article dealing with rabbit control.

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## Now that's a snake!

*Committee member Steve Procter was bushwalking with others when they came across 3 metres of wildlife!*

A very large diamond python estimated as almost 3 metres was seen basking in a patch of sunshine on a cool winter morning just off a little used walking track in Brisbane Water National Park at Umina Heights on the Central Coast on the first weekend in July. It is so unusual to see these large predators in the bush that we thought it may be of interest to readers. One of the group also saw three pythons beside Patonga Creek a few years previously, not far from Umina Heights. They were, however, comparatively short in comparison.

The Australian Museum has a size range of 2 – 3 meters for these reptiles and their website has details of their distribution, habitat and behaviour.





## Australia's (un)Sustainable Population Strategy

Committee member Jill Green has reviewed the population strategy exercise conducted by the Federal Government and found it wanting.

In September 2009 the Treasurer released an updated Intergenerational Report that forecast that Australia's population would increase by 65% to 35 million by 2049. The previous report, produced only in 2007, predicted a level of 28.5 million in 2047. The large increase in the projection arose from higher assumptions of future fertility and migration levels based on recent experience. This report created considerable public and led to calls for better planning and control of population levels.

In response to this concern Tony Burke, the Minister for Sustainability, Environment, Water, Population and Communities, established the Sustainable Population Strategy Taskforce and 3 advisory panels to support the development of the strategy and provide information to support a public consultation process. The panels covered:

- Demographic change and liveability (led by Professor Graeme Hugo)
- Productivity and prosperity (led by Ms Heather Ridout)
- Sustainable development (led by Hon Bob Carr)

In December 2010 an Issues Paper was released and the Minister called for all Australians to have their say about the major challenges and opportunities created by a changing population. The media release from the Minister included the following statements:

*"The objective of a Sustainable Population Strategy will be to ensure that future changes in Australia's population are compatible with the sustainability of our economy, environment and communities."*

*"The ultimate goal of the Sustainable Population Strategy is to improve the wellbeing of current and future generations through more effective recognition and management of the impacts of population changes."*

Many organisations, including STEP, welcomed the opportunity to express their concerns about the current path of rapid population growth and were hoping that the Government was finally going to adopt a realistic long-term population policy.

The Strategy report in response to submissions received and the work of the Taskgroup was released in May 2011.

### The government's strategy

The first thing to note about the Strategy is that there is no explanation of what a sustainable population is or should be. It is not a population strategy at all. It is a reactive plan for managing changes in population. The report reads like an election PR manifesto. To quote from the report, the stated purposes of the strategy are:

*"• to outline the key changes occurring in Australia's population;*

- to explain what the Government means by a sustainable population and how this links to the broader goal of a sustainable Australia; and*
- to outline how the Government's existing initiatives and new initiatives in this Budget help to prepare communities for changes in our population."*

Unfortunately information on the second point is missing. There is no cogent definition of a sustainable population in the report. There is not even any restatement of the possible future population levels that would provide a context for the information in the report.

The strategy is simply a statement of short to medium term government policy to deal with changes in the population levels in various parts of the country. It appears that the government considers a sustainable population is the level that magically evolves from net fertility and the migration policies that will continue to respond to short-term vested interests.

### Reasons given for no population targets

The report argues against setting a population target for the following reasons:

- It is too hard to predict future population levels because the main components of population growth, net fertility and migration, cannot be accurately predicted or controlled.
- A population target would limit the use of migration to address skill and labour shortages.
- The report even speculates that future technologies will lead to more efficient use of water and energy and natural resources so it will be easier to cope with higher population levels.

The report believes that population growth issues can be solved by improved regional social and environmental planning. To this end resources will be applied to develop a set of sustainability indicators that will provide a measurement of "well being" and inform Government decisions.

The report concludes:

*"So, rather than setting a target, the central objective of this Strategy is to lay the platform for a more sustainable Australia. In contrast to relying on long term projections, this can be better achieved by managing the impacts of all aspects of our current population, closely monitoring migration levels, and using population projections for the short to medium term to plan and prepare for our population's needs in the future."*

### Fundamental problems with the strategy

The Report is hugely disappointing. Once again the Government has ducked the issue of controlling current growth, let alone defining a longer term limit in Australia's

population.

There are several fundamental flaws in the arguments in the Report.

1. There is no recognition of the fact that our resources are finite. There will be a limit to the number of people that can be fed, housed and provided with a continuation of our current quality of life.
2. There is no acknowledgement that climate change is likely to reduce the availability of agricultural land and water supply for a growing population. In addition coastal land available for housing will reduce with anticipated sea level rise.
3. The continuing growth in our population will make it harder to reduce greenhouse gas emissions and our ability to achieve our reduction commitments.

4. Above all, it is possible to project the level of population sufficiently accurately to be able to understand and properly prepare for the future. If population is allowed to grow too high, future generations must suffer. It is not easy to turn back the clock once it is realized that future population levels will reduce standards of living and will not be sustainable.

A sample of ABS projections of future population levels based on a range of assumptions of future fertility, mortality and migration are shown in the table below. Current experience is fertility of 1.9 births per woman, life expectancy at birth is 79.3 (male) and 83.9 (female) and net overseas migration has averaged about 200,000 pa over the past 5 years.

| Total Fertility Rate(children per woman) | Life Expectancy after 2056 | Net annual overseas migration | Projected Level of Population |              |
|--|----------------------------|-------------------------------|-------------------------------|--------------|
|  |                            |                               | 2056                          | 2101         |
| 1.6                                      | 85 (male) / 88 (female)    | 140,000                       | 30.9 million                  | 33.7 million |
| 1.8                                      | 85 (male) / 88 (female)    | 160,000                       | 35.5 million                  | 44.7 million |
| 2.0                                      | 94 (male) / 96 (female)    | 220,000                       | 42.5 million                  | 62.2 million |

The medium projection in the table, which is conservative compared with recent experience, will lead to a population of between 30 and 40 million in the longer

term, an increase of at least 50% over current levels. It is difficult to imagine how Australians can experience improved well-being under this scenario.

### STEP's Position Paper.

STEP is currently finalising a Position Paper on population. One of the recommendations is that the Australian Government, as a matter of urgency, determines a population for Australia and puts policies and a timetable in place to achieve it. The paper will be made available to the Nature Conservation Council

(NCC), our peak body. It will form the basis of our discussion with other environment groups in NSW of the population issue. Ultimately we hope that a strong policy position will be adopted by the NCC and be argued strongly in the public arena.

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### Positions vacant

We are looking for a member with some time and sales experience to help in the distribution of our publications. We have sold many thousand of maps and books over the years but realise that there is a lot more opportunity to spread the word. This would involve visiting potential outlets such as bookshops, newsagents and post offices and following up as necessary to secure further orders. As with all STEP positions, the pay is nil, you do it for the glory. If you are interested please contact Barry Tomkinson at [barryt@bigpond.net.au](mailto:barryt@bigpond.net.au) or on 0412 250 595.

## Book review

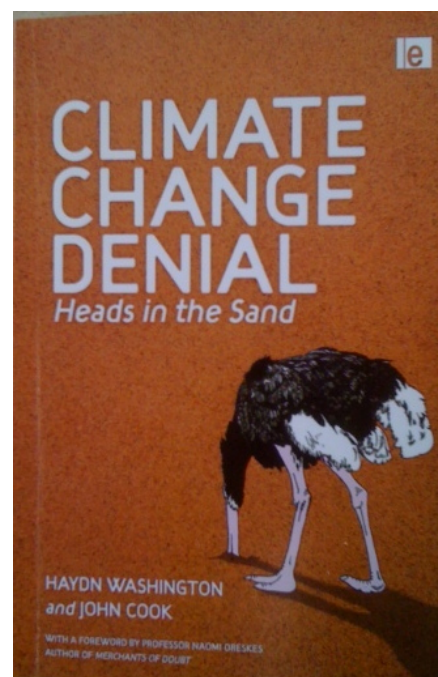
### Climate Change Denial: Heads in the Sand

This great book is a collaboration between Dr Haydn Washington and John Cook. Haydn is an environmental scientist well known to most in the Australian environmental movement for his defence of the values of wilderness and otherwise. John Cook, with a physics background, runs the site <http://www.skepticalscience.com/> which has a wealth of information.

Anyone interested in the science behind global warming and the nature of the denial arguments would find this book most useful. It is written in an easy to comprehend and no-nonsense style. The methods and motives of the denialists are dealt with and we are left to wonder why our society tolerates the media giving equal time to the crazies in the interest of 'balance'. We are left to wonder why so many people want to believe the Alan Jones and Barnaby Joyce and disbelieve almost 100% of thousands of climate scientists throughout the world. One can't help but agree that we humans have 'an amazing ability to reject reality and retreat into delusion.' This book throws light on all of that.

The authors deal with the nature and types of denial, our tolerance of it and present strategies for dealing with it. If you are feeling a bit delusional about global warming or have friends or family who have sunk into deep delusion then this is the book for you.

Climate change denial: Heads in the sand. Haydn Washington and John Cook, Earthscan 2011.



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## Book review: *The Gardens of Stone Visitors Map incorporating the Gardens of Stone Stage Two Reserve Proposal*

By STEP member Janine Kitson

Recently The Blue Mountains Conservation Society and The Colong Foundation for Wilderness launched a map and guide to the Gardens of Stone. This spectacular natural region is on the western side of the Great Diving Range near Lithgow and includes Mount York and the Newnes Plateau.

The map puts forward a convincing argument that *all* of the Garden of Stone area should be fully protected. In 1994 a Gardens of Stone National Park was gazetted. However vast areas remained unprotected. There are now significant threats to this pristine area from open cut coal mining. The map calls for a 'Stage Two Reserve Proposal' for the Gardens of Stone. Stage Two seeks to protect the remaining two thirds of the Gardens of Stone region.

Other threats include the damage caused by inappropriate use by trail bikes and 4WD vehicles, logging, hunting and shooting and a proposed new superhighway over the Blue Mountains.

The name 'Gardens of Stone' is named so because of its spectacular rock formations. It is geological wonderland containing unique sandstone turrets known as pagodas. The map outlines the significance of the Wiradjuri people who are the traditional custodians of the Gardens of Stone. The area's rich Aboriginal cultural heritage includes Mayinygu Marragu that contains engravings and axe grinding grooves, rock shelters, archaeological deposits and art dating back 11,000 years ago. The area also has rich convict history that dates back to 1814 when a 12 foot-wide road, down the precipitous Mount York pass was built by convicts, under the supervision of William Cox.

The area also includes rich industrial heritage. The 1893 Hartley Vale oil shale ruins have preserved cave dwellings where Welsh miners and their families lived.

The area contains the highest density of rare plants anywhere in the Blue Mountains, and includes nationally endangered upland swamps, critically endangered grassy box woodlands, a unique snowgum mallee, and moist gullies communities, such as Brown Barrels and Blue Mountains Ash.

The publically owned state forests in this region are proposed to be clear felled and destroyed for open cut coal mining. Underground coal mining already causes cliff falls, rock cracks and crevasses, swamp and stream death and the visual blight of unsightly infrastructure. A politically viable means of protecting the Gardens of Stone's conservation values is to make it a State Conservation Area. The Colong Foundation and Blue Mountains Conservation Society hopes that this map will encourage many more visitors to explore this scenic area. By visiting the area they hope to create the groundswell needed to save the area from unwanted desecration from coal mining.

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The Blue Mountains Conservation Society and The Colong Foundation for Wilderness, December 2010. Cartography by Karen MacLaughlin; Text by Keith Muir; Images by Andrew Valja and Anna Marshall. Buy from <http://www.bluemountains.org.au/sales.shtml> [\$9 including handling and postage] or Keith Muir, Colong Foundation for Wilderness, Phone (02) 9261-2400 or [www.colongwilderness.org.au](http://www.colongwilderness.org.au)

## Rats and all that

Nick Cooper has responded to our article on poisons last year. Here we present the first section of his paper. The second will follow in our next newsletter he works in the field of low-hazard pest management.

STEP Matters Number 155 June 2010 reported that AEPMA has called for a mass recall of quintozone, a soil fungicide. This prompted me to draw to your attention an up coming issue with rodents.

The US EPA has released "Final Risk Mitigation Decision for Ten Rodenticides" on their website. <http://www.epa.gov/pesticides/reregistration/rodenticides/finalriskdecision.htm> (viewed 17/5/11) Of particular interest are the following extracts:

**Children's Risk Mitigation** - To minimize children's exposure to rodenticide products used in homes, EPA is requiring that all rodenticide bait products available for sale to consumers be sold only in bait stations. Loose bait such as pellets will be prohibited as a bait form. A range of different types of bait stations will meet the new requirements, providing flexibility in cost.'

**Ecological Risk Mitigation** - To reduce wildlife exposures and ecological risks, EPA will require sales and distribution and packaging restrictions for products containing four of the ten rodenticides that pose the greatest risk to wildlife (the second-generation anticoagulants – brodifacoum, bromadiolone, difenacoum, and difethialone) to prevent purchase on the consumer market.'

Systems Pest Management hopes that this will follow through to Australia, as currently, we are able to purchase a variety of single dose anti-coagulants from the supermarket or hardware store and place them in areas where people, pets and wildlife can access them. Single dose anti-coagulants also have the potential for secondary poisoning.

### Appropriate Rodent Management

Rodents are characterised by their gnawing habit; an action they perform regularly to wear down their continually growing teeth. This is a major reason for their pest status as they are capable of chewing through electrical wiring, thereby creating a potential fire hazard. They also can damage stored goods.

Rats and mice have highly developed senses of taste and smell. They are colour blind and have a poor sense of sight. Rats and mice are scavengers and eat an enormous variety of materials including all types of human food.

Rats are cautious and if their food is in an exposed area where it cannot be consumed quickly, they usually carry or drag it to a hiding place. Rats are neophobic, which means they are generally afraid of new objects in their environment. This is a significant factor when placing and setting traps and baits. In comparison, mice are curious and adventurous.

In Australia we have three **Introduced pest species:**

*Rattus rattus*

*Rattus norvegicus*

*Mus musculus*

To the untrained, these may be mistaken for **Native rodents or marsupials:**

- *Rattus fuscipes*

- *Antechinus* (e.g. *Antechinus stuartii*)

### Signs of a Rodent's Presence

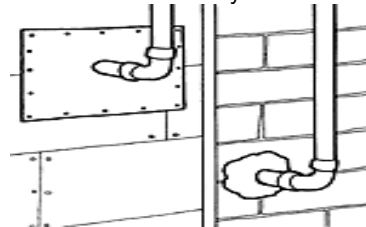
- Rub marks, greasy smears or fur along bearers and joists, walls and fixtures.
- Tracks of footprints or tail marks on dusty surfaces.
- Urine sprinkling on areas frequently travelled.
- Gnawing marks on plumbing, cabling, air-conditioning, framing material etc.
- Fresh accumulations of woody shavings.
- Noises particularly at night, sounding like gnawing, climbing, clawing, bumping, squeaking or fighting.
- Nests in made of vegetation, rags, paper, cardboard, straw etc.
- Disappearance of or damage to food.
- Excitement of pets.
- Accumulation of old snail shells, nuts and berries.
- Fresh, moist droppings- these can help you identify the species.

### Integrated Pest Management for Rodents Non-chemical Options

#### Rat Proofing:

Ultimate long-term preventative control of rodents requires their exclusion from the premises, which is best undertaken by blocking as many potential entry points as possible. This can be difficult to achieve as rats may enter through holes as little as 1.3cm in diameter, and even smaller for mice.

Weather-strips at the bases of exterior doorways, filling of holes around conduits etc. in walls and floors, are examples of this. Use of steel wool stuffed into such holes is one simple method of eliminating entry points, although be aware that a persistent rat may be able to dislodge this. Do not use plastic, wood or other chewable materials for proofing. Metal plates, wires or mortar filling is preferred as it provides a more effective initial barrier to rodent entry.



Overhanging tree branches and vines growing on houses may allow rodents to gain access to the house whereby they can then locate gaps in roof tiles or other holes. These access pathways should therefore be removed by cutting back branches and removing the vines.

If rats are climbing up pipes etc. then a shield can be affixed to form a barrier to their entry. The shield should be above jumping height and broad enough that they cannot move around it.

**Sanitation:**

Minimising the availability of food and water acts to deter rodents from establishing themselves in a given area and will also limit the number of individuals, which a given area will be able to sustain. Storage of foodstuffs in

sealed containers off the ground, regular and thorough cleaning of all surfaces, storage of waste in sealed containers or its daily disposal, repair of leaky taps and diversion of hot water service overflow systems will help to reduce the areas attraction.

Possible harbourage areas can also be minimised by cleaning away overgrown vegetation, limiting storage of rubble, timber and other goods in the yard and around the house.

*Nick Cooper is with Systems Pest Management Pty Ltd at Epping where he can be contacted at 9869 3153.*

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## **The environmentalist’s dilemma – living with bandicoots**

STEP members Paul and Mary Keighery have sent along photos of their holey lawn now that they are blessed by the presence of bandicoots for the first time in 37 years. We reported in an earlier newsletter that bandicoots were drowning in swimming pools. They may have an additional hazard to deal with if they do this to the lawns of the more house-proud amongst us!



## **Talk postponed**

The talk by Kirsty Ruddock of the Environmental Defender’s Office, planned for 9 August, clashed with a sudden call for all parties interested in the future of the Town Centres to attend a Council meeting to discuss the issue. The plans were originally determined by the Planning Panel imposed on Ku-ring-gai by the previous state government. We consequently decided to defer Kirsty’s talk. We shall let you know of the new date and it will also be on our web site. Kirsty ran the case that overturned the decisions of the hated Planning Panel but it seems that some councillors were intent on restoring the Panel’s decisions. Of course there will be tremendous pressure from developers and others to do so.

We have previously featured material from the Earth Policy Institute and it continues to produce thoughtful material. Plan B refers to a concept in Brown's book *World on the Edge*. Plan A is doing nothing.

## WHEN THE NILE RUNS DRY\* [www.earth-policy.org/plan\\_b\\_updates/2011/update97](http://www.earth-policy.org/plan_b_updates/2011/update97)

By Lester R. Brown

A new scramble for Africa is under way. As global food prices rise and exporters reduce shipments of commodities, countries that rely on imported grain are panicking. Affluent countries like Saudi Arabia, South Korea, China and India have descended on fertile plains across the African continent, acquiring huge tracts of land to produce wheat, rice and corn for consumption back home.

Some of these land acquisitions are enormous. South Korea, which imports 70 percent of its grain, has acquired 1.7 million acres in Sudan to grow wheat—an area twice the size of Rhode Island. In Ethiopia, a Saudi firm has leased 25,000 acres to grow rice, with the option of expanding this to 750,000 acres. And India has leased several hundred thousand acres there to grow corn, rice and other crops.

These land grabs shrink the food supply in famine-prone African nations and anger local farmers, who see their governments selling their ancestral lands to foreigners. They also pose a grave threat to Africa's newest democracy: Egypt.

Egypt is a nation of bread eaters. Its citizens consume 18 million tons of wheat annually, more than half of which comes from abroad. (See data at [www.earth-policy.org](http://www.earth-policy.org).) Egypt is now the world's leading wheat importer, and subsidized bread—for which the government doles out approximately \$2 billion per year—is seen as an entitlement by the 60 percent or so of Egyptian families who depend on it.

As Egypt tries to fashion a functioning democracy after President Hosni Mubarak's departure, land grabs to the south are threatening its ability to put bread on the table because all of Egypt's grain is either imported or produced with water from the Nile River, which flows north through Ethiopia and Sudan before reaching Egypt. (Since rainfall in Egypt is negligible to nonexistent, its agriculture is totally dependent on the Nile.)

Unfortunately for Egypt, two of the favorite targets for land acquisitions are Ethiopia and Sudan, which together occupy three-fourths of the Nile River Basin. Today's demands for water are such that there is little left of the river when it eventually empties into the Mediterranean.

The Nile Waters Agreement, which Egypt and Sudan signed in 1959, gave Egypt 75 percent of the river's flow, 25 percent to Sudan and none to Ethiopia. This situation is changing abruptly as wealthy foreign governments and

international agribusiness firms snatch up large swaths of arable land in the upper Basin. While these deals are typically described as land acquisitions, they are also, in effect, water acquisitions.

Now, when competing for Nile water, Cairo must deal with several governments and commercial interests that were not party to the 1959 agreement. Moreover, Ethiopia—never enamored of the agreement—has announced plans to build a huge hydroelectric dam on its branch of the Nile that would reduce the water flow to Egypt even more.

Because Egypt's wheat yields are already among the world's highest, it has little potential to raise its land productivity further. With its population of 81 million projected to reach 101 million by 2025, finding enough food and water is a daunting challenge.

Egypt's plight could become part of a larger, more troubling scenario. Its upstream Nile neighbors—Sudan, with 44 million people, and Ethiopia, with 83 million—are growing even faster, increasing the need for water to produce food. Projections by the United Nations show the combined population of these three countries increasing to 272 million by 2025—and 360 million by 2050—from 208 million now.

Growing water demand, driven by population growth and foreign land (and water) acquisitions, are straining the Nile's natural limits. Avoiding dangerous conflicts over water will require three Basin-wide initiatives. The first is for governments to address the population threat head-on by ensuring that all women have access to family planning services and by providing education for girls throughout the region. The second is to adopt more water-efficient irrigation technologies and shift to less water-intensive crops.

Finally, for the sake of peace and future development cooperation, the nations of the Nile River Basin should come together to ban land grabs by foreign governments and agribusiness firms. Since there is no precedent for this, international help in negotiating such a ban, similar to the World Bank's role in facilitating the 1960 Indus Waters Treaty between India and Pakistan, would likely be necessary to make it a reality.

None of these initiatives will be easy to implement, but all are essential. Without them, rising bread prices could undermine Egypt's revolution of hope and competition for the Nile's water could turn deadly.

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Lester R. Brown is President of the Earth Policy Institute and author of *World on the Edge*. Data and additional resources at [www.earth-policy.org](http://www.earth-policy.org).

Note: A version of this piece appeared in the *New York Times' Op-Ed section* on June 2, 2011.

## Order Form

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- Cheque** — send this completed form and a cheque payable to Step Inc to PO Box 5136, Turramurra, NSW 2074; **or**
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## Sunday, 23 October: Hornsby Valley Blue Gum forest walk

This walk goes along the valley floor of Hornsby's majestic Blue Gum Forest growing on rich volcanic soils. Features tall Sydney blue gums along with a number of rainforest species including lillypilli, sassafras, scrub turpentine and vines. We will walk via Fishponds waterhole – a deep pool on a large bend of Berowra Creek flanked by tall sandstone cliffs. Some rock scramble is necessary along the way

- Meet:** End of Rosemead Road, cnr Lochinvar Place, Hornsby. (Gregory's Map 77 A6, Sydney Greater Sydney Map 214 K4). Meet at 9.45am
- Length:** 4-5 km.
- Duration:** Approximately 3 hours
- Difficulty:** Medium/difficult, some steep ascent and descent, some rock scramble
- Bring:** Water and sunscreen
- Book:** By contacting Robert Bracht at [Robert.bracht@hotmail.com](mailto:Robert.bracht@hotmail.com) or 0422 088 305

## Sunday 13 November: Fagans Ridge walk, Fiddletown

This walk follows Fagans Ridge across Crown Lands leading towards Marramarra National Park. We will have wonderful vistas of this huge naturally vegetated corner of the Sydney Basin. The area was severely burnt by wildfire in 2003 and has recovered now into a vast array of interesting plants with some probably new to and some probably well known to STEP members. Morning tea will be provided.

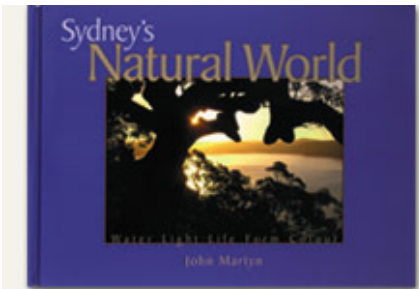
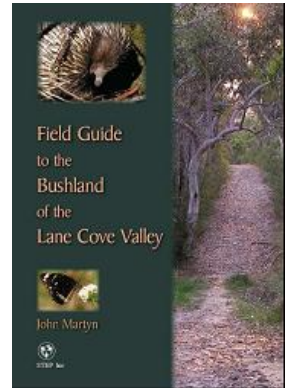
- Meet:** At the end of Peebles Rd Fiddletown at 8.30am where there is a locked fire trail gate. Map 72 A9 Sydney UBD street directory
- Option:** Those who would like to participate in some bird watching near the walk start should arrive at 7.30
- Length:** Approx 6 km
- Duration:** Approx 3 hours
- Difficulty:** Easy, very rocky and rough surface on the fire trail however
- Bring:** Water, sun protection, binoculars, camera and your preferred field guides
- Book:** Contact Barry Tomkinson on 94849934

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## STEP publications

Our maps and books are great choices for birthday and Christmas presents and can be purchased on our web site or by using the form on the previous page.

The new **Field Guide to the Bushland of the Lane Cove Valley** is the complete guide to the Valley from geology to bushwalks. Beautiful photos, maps and illustrations.



**Sydney's Natural World** is a celebration in photos and words of the natural environment that goes a long way towards defining Sydney as one of the world's great cities.



If undelivered return to  
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