



# STEP Matters

Number 150, June 2009

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## In this Issue

This issue of *STEP Matters* contains a mix of local and global issues. We report on the state of play on a range of proposed local developments, many of which will unfortunately be decided at State Government level.

We are delighted to announce that Lee Rhiannon has agreed to address our AGM and we ask for your input into our deliberations as we think about the future direction of STEP.

Robert Bracht introduces our new STEP Out Recreational Walks Program, aimed at introducing a new audience to the wonders of the local environment.

New STEP committee member Robin Buchanan takes us through the latest thinking on natural area restoration, still known by many as bush regeneration, but now well advanced in the use of new strategies.

Di Campbell tells us about a lesser known local environmental gem, the Berowra Valley Regional Park, and how it is successfully managed by two different authorities.

John Burke continues his occasional series of provocative articles with some new thinking on how to best protect people and assets from bushfire. Is there a better way?

Barnaby Howarth profiles Wendy Double, an early bushland pioneer in the Thornleigh area.

The difficult trade-offs between the environment and water warranted a recent *Sydney Morning Herald* editorial. Dianne Montagu from GRIP looks at a similar issue, this time coal versus food from a Gloucester resident perspective.

We continue our focus on the climate, with an article on stormwater usage by Cameron Tomkinson.

Finally, your editor has been moved by the plight of Family First senator Steve Fielding, as he agonises over the link between carbon emissions and climate change, to search out a 'guide for dummies' for the use of all climate sceptics.

*Barry Tomkinson*

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## Walks, Talks and Plans

### Tuesday 13 October – Talk by Lee Rhiannon MLC and AGM

Lee Rhiannon, the Leader of the Greens in the NSW Parliament, has agreed to address us at our AGM. More details to follow but keep the date free!

### Sunday 19 July – Walk Middle Cove

Neroli Lock (9489 5794) will lead a delightful two hour loop walk around the water's edge of Middle Cove. It leads through tall shady forest and sandstone outcrops with views over the tranquil bush-covered hills and coves of Middle Harbour. The walk rating is easy. Meet at the end of Sugarloaf Crescent, Middle Cove for a 1.30 pm start.

### STEP into the Future

STEP is a community-based environmental group which has been successfully operating for more than 30 years. Our current primary aim is to preserve all natural bushland in the Ku-ring-gai area and local environs from alienation and degradation. The committee has recently committed themselves to a planning and review process in which we will take a close look at ourselves and our activities, both now and into the future.

*As part of that process, the committee invites all current members to write to our secretary and tell us what future priorities you believe STEP should adopt. Are there environmental priorities we are not addressing properly? Alternatively, are there activities which are no longer relevant and which we should cease?*

*Yours views are most welcome!*

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## Update on Key Issues

### Wahroonga Estate Redevelopment Concept Plan (SAN Site)

There has been a great deal of activity on this matter. The fact-based STEP submission to the Department of Planning opposing the Wahroonga Estate Redevelopment Concept Plan is now on our web site. Copies of the submission have been sent to local State politicians and to all Hornsby and Ku-ring-gai councillors. Both of these Councils have also sent in their own submissions, which can be found on their web sites. The Ku-ring-gai submission in particular is excellent, with factual and detailed responses challenging many of the representations made by the developer in their Concept Plan.

STEP has been strongly supported by both the Nature Conservation Council of NSW and the National Parks Association of NSW, both of whom have sent in supporting submissions of their own. Unfortunately, the Australian Conservation Foundation declined to support STEP 'as it doesn't fall within our national frame of sustainable cities issues'. STEP has also written directly to the Hon Peter Garrett, Minister for the Department of the Environment, Water, Heritage and the Arts (DEWHA).

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## STEP Inc

Community-based Environmental Conservation since 1978  
PO Box 697, Turrumurra, NSW 2074

The proposed development has been identified as a 'controlled action' in relation to the Federally-listed critically endangered Blue Gum High Forest on-site, but not the Sydney Turpentine Ironbark Forest (STIF). STEP believes that the larger area of STIF identified by Ku-ring-gai Council mapping would satisfy the description of STIF under the EPBC Act, thus also requiring the proposed development to be determined a controlled action by DEWHA. STEP has strongly urged the Minister to determine the Wahroonga Estate Redevelopment an unacceptable impact on these critically endangered ecological communities and to refuse development consent.

The NSW Liberal Party has indicated to STEP that it strongly shares our concerns. The Greens have indicated that they will oppose the Concept Plan. STEP volunteers have distributed nearly 3000 information leaflets into the local community, urging residents to make their views known to the NSW Government. We know many have done so and we are also aware of other local community action groups who have made their own submissions. STEP has also been active in making contact with local media organisations to make them aware of our concerns.

Submissions to the Department of Planning closed on 19 June. The Department has 10 days after that to provide a summary of issues raised to the proponent (Johnson Property Group). These issues will then be addressed by them in a Preferred Project Report which will be released for further discussion, followed by a meeting of the Community Reference Group. STEP is represented on this Group. Watch this space!

### **Hornsby Shire Housing Strategy**

The new Hornsby Housing Strategy was covered in some detail in the last issue of *STEP Matters*. There continues to be vigorous opposition from the local communities most affected by the proposed plans.

STEP's concerns relate to the fact that the Strategy appears to have been drawn up in a vacuum and fails to take into account the long-term planning needs of the area. Indeed, in the absence of a long-term vision by Hornsby Council for the Bushland Shire and what it should look like in 50 years time, this is not surprising. It is, however, a sad reflection of a poor state of planning in the Shire, as in NSW generally.

STEP has lodged a formal submission expressing its concerns to Hornsby Council, who will now consider all submissions received.

### **St Ives Showground Precinct Options**

The February edition of *STEP Matters* carried details of the Ideas Forum held at that time to gauge community views on the future uses of the Showground. The STEP presentation can be found on our web site. Ku-ring-gai Council advise that the outputs from that Forum have been passed onto their principal landscape architect and a new options paper is being developed for presentation to Council by end June. It is planned that there will be further community consultation once Council has considered its position.

## **Gloucester: Coal or Food?**

*Fossil fuel versus food is an issue of increasing importance. Dianne Montagu is the marketing manager for GRIP (Gloucester Residents in Partnership). In this article she gives a local view of the issue.*

Which way would you go from Sydney to Armidale? Most people choose to go through Gloucester to avoid the eyesore of the Singleton and Muswellbrook coal mines. Huge areas, of what was once prime farming land, have been lost to the juggernaut of the mining industry.

In Gloucester, in the Hunter Valley, we wait to discover if we will go the same way. Gloucester Shire covers an area of 2,900 km<sup>2</sup>, with a population of 4,800. The towns are surrounded by steep terrain, hills, forests and streams. The area has a number of important river systems including the Avon, Barrington and Gloucester Rivers which spill out into the Port Stephens Marine Park. It is predominately a farming area with good rainfall. Tourists visit for outdoor pursuits and the World Heritage Area of Barrington Tops.

Within this valley Gloucester Coal operates coal mines at Stratford and Duralie, south of Gloucester. Gloucester Coal mines coking coal (selling mainly to Japan for its steel production) and thermal coal which is sold mainly to traders who blend the coal and on-sell within global export markets for North Asian electricity generation. The company reported in 2008 that it owned 5,130 hectares of land in the Gloucester Basin and had multiple open-cut mine opportunities to expand and extend operations. Their land grab has encroached on the small villages of Stratford, Craven and Wards River. The Johnson's Creek Conservation Committee is hard at work preventing the proposed discharge of waste water from the Duralie Mine into Mammy Johnson's Creek.

AGL have a major coal seam gas project in the valley. The natural gas is recovered by drilling a well (borehole) into the coal seam and fracturing it with high-pressure water and sand. This process is reported to present significant ecological risks to landscapes, soil profiles, surrounding aquifers and nearby streams. The coal seam gas water produced during the process frequently contains high quantities of salt and other contaminants, which can cause environmental harm if released to land or waters.

The greatest threat to Gloucester town comes from Gloucester Resources Ltd, a coal exploration company. They hold licences which surround the town on three sides, right up to the railway station. Gloucester Resources Ltd has acquired vast tracts of land for millions of dollars. Some farmers wanted to sell and retire, some were too scared not to, some are holding out.

The majority of residents do not want a mine but Ian Macdonald, the NSW Minister for Minerals and Energy and Minister for Agriculture, has other ideas. The NSW Government declare that if a resource is there they will mine it. Gloucester and Hunter Councils successfully put a motion to the Shires Association of NSW to call on the NSW Government to forbid mining or exploration within scenic protection and urban and rural residential zones.

Meanwhile, 32 million tonnes of annual coal production for Australia was approved in 2008, generating \$12.4 billion in exports and resulting in the emission of more than 76 million tonnes of carbon dioxide and the destruction of prime farming and food producing land. Will Gloucester be the next casualty?

## Introducing our New STEP Out Recreational Walks Program

STEP's walks program has been a feature of our activities for many years. The walks are targeted at members who are generally fairly experienced bushwalkers and who appreciate spending time learning more about the detail of the fauna and flora encountered during the walk. These walks will continue but STEP has decided to extend the walks program to cater for members and others who may be less experienced and whose primary aim is to experience more of the outdoors by having someone show them some of the many local walks. Our thanks go to Robert Bracht for volunteering to run our pilot STEP Out Recreational Walks Program. Robert writes:

STEP Out Recreational Walks are a series of walks designed to appeal to people looking for an enjoyable walk through our beautiful bush. The walks are geared towards general bush walking and medium exercise for the reasonably fit. The walks are generally *not* suitable for children or for anyone who has difficulty in walking over steep and sometimes rough terrain. The walks are aimed at both existing STEP members and any others who simply want to get out into the wonderful local Australian bushland.

**Where and when:** The walks will be held on the first Sunday of the month (generally) and will commence at 10 am. At the end of a walk people will have the option to get together in a local coffee shop!

**Bring:** Normal bush walking standards apply, that is bring your own drinking water, something to nibble for energy, suitable shoes, a hat, sun screen, insect repellent and weather protection if required.

**Who:** STEP members and friends.

**To book:** Please contact Robert Bracht (robert.bracht@hotmail.com or 0422 088 305).

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### Sunday 2 August: Thornleigh, Short Street to City View and Lorna Pass

The walk will commence from Short Street, Thornleigh and proceed to City View Lookout. We will then walk Boy Scout Creek Track joining part of the Great North Walk and returning through Lorna Pass to Dawson Avenue. This is a strenuous walk along a narrow track with steep descent and ascent. At the end of the walk you may join us for coffee at Thornleigh Shopping Complex.

**Meet:** 9.45 am, Short Street, Thornleigh (Gregory's Map 99 B3, Sydway Greater Sydney Map 214 K19)

**Length:** approx 5 km

**Estimated duration:** 2–3 hours

**Difficulty:** medium

#### Muogamarra Nature Reserve

Muogamarra Nature Reserve is one of a number of parks in northern Sydney that protect the Hawkesbury Sandstone environment. Due to the strict protection it has enjoyed, it is relatively undisturbed. Access is limited to the public to just a few weekends a year, in spring, when the wildflowers are in bloom. Outside these times access is only available for the purpose of research and study.

It lies about 40 km north of Sydney, on the south side of the Hawkesbury River next to Berowra Creek (Gregory's Map 19, Sydway Greater Sydney Map 157 A7).

Head north on the Old Pacific Highway and turn left into the entrance about 3.5 km north of Cowan Station (opposite Pie in the Sky Roadhouse). The drive from the entrance gate to the Visitors Centre is approx 3 km on dirt road. Car pooling is suggested.

### Friday 28 August: Muogamarra Nature Reserve – Guided Walk

The walk will be led by a guide from Chase Alive volunteers. We are restricted to 20 places so acceptance will be on a first come, first reserved basis. **So please book early** (robert.bracht@hotmail.com, 0422 088 305).

**Meet:** 9.45 am at Visitors Centre (see box on this page)

**Cost:** \$6 per adult

**Length:** 6 km

**Estimated duration:** 4–5 hours

**Difficulty:** medium, the walk is mostly flat but there is one steep ascent/descent; not suitable for children

**Bring:** lunch, water and snacks

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### Saturday 5 September: Muogamarra Nature Reserve – Individual Walks

Guided walks are not available over the weekend. However, several self-guided walks are available: Deerubbin Look Over and Lloyd Trig. Both walks are monitored by volunteer guides. Maps are distributed but must be returned at the end of the walk.

**Meet:** 9.45 am at Visitors Centre (see box on this page)

**Cost:** \$6 per adult

**Length:** 5–6 km

**Estimated duration:** 3–4 hours

**Difficulty:** medium

**Bring:** lunch, water and snacks

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### Sunday 4 October (Long Weekend): Callicoma Walk, Cherrybrook

The walk will commence from The Lakes of Cherrybrook Reserve and follow the circular track. Areas of interest include dry cave structure and dry sandstone ridges as well as the Callicoma and Coachwood temperate rainforest. At the end of the walk you may join us for coffee at Cherrybrook Shopping Centre.

**Meet:** 9.45 am at Observation Platform, The Lakes of Cherrybrook Reserve at the corner of Shepherds and Macquarie Drives, Greenway Estate, Cherrybrook (Sydway Greater Sydney Map 213 M13)

**Length:** 5 km

**Estimated duration:** 2–3 hours

**Difficulty:** moderate

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### Sunday 1 November: Fidden's Wharf, West Killara

The walk will follow part of Lane Cove River along a stepped path which is reputed to have been built by convicts. Joseph Fidden was given a land grant in 1813 in what is now Lindfield. The area was originally the principal source of timber for the growing colony. Joseph Fidden established a wharf on the river below his farm from which he could transport the logs to Sydney. At the end of the walk you may join us for coffee at Moore Ave, West Lindfield.

**Meet:** 9.45 am, corner of Bradfield Road and Carramar Road, West Killara; parking available in Bradfield Road (Gregory's Map 101 F15, Sydway Greater Sydney Map 236 D20)

**Length:** 3 km

**Estimated duration:** 1–2 hours

**Difficulty:** moderate

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## Robin Buchanan Joins STEP Committee



STEP is delighted that Robin Buchanan has rejoined the STEP committee after a break of some years.

Robin became a pioneering educator of bush regeneration in Australia after studying biological sciences at Macquarie University from 1971–75. She focused her efforts on developing management plans for bushlands in the Sydney area and outer regions. She was one of a minority group living in Sydney who challenged the established methods of managing remnant urban bushland. Her approach to bush regeneration, highlighting the need to be concerned about the conservation of native flora in our cities, was a new concept. This became the foundation of a new tertiary course on urban bushland management that she developed. Robin has published several books on bush regeneration.

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### The Bradley Method, Bush Regeneration, Natural Area Restoration and Ecological Restoration

... by STEP committee member Robin Buchanan

What do all these terms mean? In the mid 1970s when I started in the bush regeneration industry life was simple; we identified plants and pulled out weeds according to the Bradley Method. In Joan Bradley's words, the essence of bush regeneration is that:

areas to be weeded are selected, and their size graduated, in such a way that each is promptly re-colonised, and quickly stabilised, by the spontaneous regeneration of native plants.

Joan and Eileen Bradley had firm principles: work from good areas towards bad ones, keep the soil deeply mulched and allow regeneration to dictate the rate of clearing. In reality we never did get to the really dense weeds. Now it is realised that a successful project relies on an assessment of each site and the appropriate strategy carefully selected for each zone.

Selection of the most appropriate strategy relies on an assessment of resilience, a term that has entered the natural area restoration industry from the scientific community via Tein McDonald (whom many of you will remember from Ku-ring-gai Council). Resilience, sometimes called 'regeneration capacity', is simply the ability of the ecosystem to recover from damage and disturbance. The degree of resilience depends on two main factors; the damage and ecosystem properties. The impact of the damage is controlled by the type, degree, extent, duration and time elapsed since the damage. Resilience also depends on characteristics of the natural ecosystem and its component species, including reproductive and migratory strategies of plants and animals, which determine their response to damaging impacts.

The strategy you select will depend on resilience and can be divided into several categories:

#### Prescribed Natural Regeneration

Suitable for areas of high resilience. Tein McDonald, together with an American coauthor, have recently recommended this term to describe the deliberate decision to allow regeneration without any intervention.

#### Assisted Natural Regeneration

Suitable for areas with high to moderate resilience. Assisted natural regeneration involves active intervention to help an ecosystem recover. The method utilises, reinstates and reinforces the ecosystem's natural regeneration processes. Management involves doing everything to remove damaging influences and everything to trigger natural regeneration, for example removing weeds, reinstating natural fire regimes, controlling run-off, managing pest animals and fencing.

#### Revegetation or Reintroduction

Suitable for areas with moderate to nil resilience. Revegetation involves adding plants to the ecosystem by planting, direct seeding or translocating.

#### Reconstruction or Reassembly

Suitable for areas with low to nil resilience. Reconstruction involves the artificial construction of the original community, or parts of the community, from scratch. This may include revegetation and the addition of other habitat elements such as logs and nest boxes.

#### Type Conversion (Transformation, Substitution, Creation or Fabrication)

Suitable for areas with no resilience. Type conversion is the deliberate choice to change an ecosystem to one more suited to the permanently altered site conditions. This can be achieved by construction or natural regeneration techniques. The conversion of degraded bushland into wetlands at the end of a stormwater pipes is a common example.

#### Discussion

Because of the TAFE course of the name, natural area restoration has become widely used in Australia to encompass all strategies. Ecological restoration is widely used overseas. Bush regeneration, as defined by Joan Bradley, only includes aspects of assisted natural regeneration but these days bush regeneration is often used to include many of the above strategies. In other words, there does not seem to be a universally agreed term for managing weeds and repairing natural areas, but the individual strategies are now clearly named.

#### Conclusion

Life is much harder now. We need to assess the damage and resilience then select the appropriate strategy before we start work, but the quality of work is all the better for going through the process. It doesn't really matter what overarching name we use.

#### References

Buchanan, R. (2009) *Restoring Natural Areas in Australia*. NSW Department of Primary Industries (in press)

Clewell, A. and McDonald, T. (2009) Relevance of Natural Recovery to Ecological Restoration. *Ecological Restoration* 27(2), 122–124

*The SER International Primer on Ecological Restoration* (2004) Society for Ecological Restoration International [www.ser.org/content/ecological\\_restoration\\_primer.asp](http://www.ser.org/content/ecological_restoration_primer.asp)

## Berowra Valley Regional Park: One Park Managed by Two Authorities

Many STEP members will be familiar with our local national parks, especially Lane Cove, Garigal and Ku-ring-gai. These national parks are all managed by the Department of Environment and Climate Change. Less well known perhaps is the Berowra Valley Regional Park (BVRP), despite being nearly six times the size of Lane Cove National Park. Here Di Campbell, Manager of the Hornsby Shire Bushland and Biodiversity team, talks about the BVRP and its unique shared management model.



The BVRP bushland is a spectacular complex of Hawkesbury sandstone surrounding Berowra Creek and is the setting for Hornsby being known as the Bushland Shire. BVRP covers about 4,000 hectares protecting the bushland habitats of a very diverse native flora and fauna. It provides an exceptionally scenic location for bushwalking and other recreational pastimes in the bush, featuring Crosslands Reserve which is a popular place for picnics, canoeing and camping close to the city.

The park has a number of Aboriginal sites including engravings, art sites and shelters. It is thought that Berowra Creek is the boundary between two Aboriginal groups – the Darug people to the west and the Guringai people to the east. It also features historic remnants from early settlement including the trestle bridge in Galston Gorge and the ballast quarry and connecting zig zag railway in Thornleigh.

Originally formed as the Elouera Bushland Natural Park in 1964, additional Crown land was added in the late 1980s with Hornsby Council made Trustee of the Crown Reserve. In 1988 BVRP was gazetted under the National Parks and Wildlife Act. BVRP is now jointly managed by the National Parks and Wildlife Service (NPWS) and Hornsby Shire Council, initially under a Trust which was later changed into a more simple agreement between the two parties five years ago.

The model is not a very common one but seeks to capitalise on the expertise of two complementary organisations to achieve a successful conservation model. Whilst the NPWS undertakes the majority of park management tasks including bushfire management, park protection and visitor management, Council undertakes a number of defined tasks. One example is the treatment of stormwater pollution through installing and maintaining catchment remediation devices and water quality monitoring. Council also runs the free guided bushwalks program, as well as managing a large number of volunteer bushcare sites and professional bush regeneration contracts. Council also has the major role in the management of Crosslands Reserve and has facilitated upgrades together with the NPWS. Both organisations have factored this into their day-to-day working and spend several hundred thousand dollars each per year to contribute to its good management. Whilst the partnership has had its ups and downs, it is through the goodwill of both organisations that the park and the residents of the Hornsby Shire have a real jewel in their backyards.

Local residents are active, with the Friends of BVRP preparing the exceptional resource *A Guide to Berowra Valley Regional Park*. The Friends now has its own web page and has gone on to prepare bushwalking maps. Several topics of particular interest include the issue of dog walking, bushfire management and the demand for mountain bike tracks. In 2005 when the Plan of Management was adopted much debate occurred over the issue of walking dogs. These are now excluded except for three fire trails.

In 2008 the *Hornsby Shire Unstructured Recreation Strategy* was adopted, which elicited submissions from 150 residents who sought Council's support to cater for mountain bikes. I am sure that this topic will create great discussion as Council undertakes an investigation on where this might occur in a planned way as opposed to the current plethora of illegal tracks which are being formed. The topic of bushfire management is also bound to be of great interest as the Hornsby Ku-ring-gai Bush Fire Management Committee is just launching its first series of community barbeques to get public input to the new draft Bush Fire Risk Management Plan, and how this plan will relate to the Fire Management Plan for BVRP.

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## Climate Change for Dummies

New Scientist (<http://www.newscientist.com/>) was launched in 1956 'for all those men and women who are interested in scientific discovery and in its industrial, commercial and social consequences'. Barry Tomkinson looks at what it has to say about climate change.

The Family First senator Steve Fielding is reported to be unconvinced by information provided to him by Australia's chief scientist, Penny Sackett, arguing that there is a proven link between carbon emissions and climate change. The senator relies instead on advice provided to him by four well-regarded scientists, all noted climate sceptics.

This is not uncommon. There are many sensible people who are also climate sceptics. They are in the main not crack pots, but they do struggle to make sense of the conflicting information surrounding topics like climate change. The global climate is indeed anything but simple, with all kinds of different factors that influence it. These include massive events on the Sun, to the growth of microscopic creatures in the oceans, and there are subtle interactions between many of these factors.

Michael Le Page from *New Scientist* has prepared a *Climate Change Guide for the Perplexed* to help both sceptics and believers alike. He writes that:

...despite all the complexities, a firm and ever growing body of evidence points to a clear picture: the world is warming, this warming is due to human activity increasing levels of greenhouse gases in the atmosphere, and if emissions continue unabated the warming will too, with increasing serious consequences. Yes, there are still big uncertainties in some predictions, but these swing both ways. For example, the response of clouds could slow the warming or speed it up.

With so much at stake, it is right that climate science is subjected to the most intense scrutiny. What does not help is for the real issues to be muddled by discredited arguments or wild theories.

*New Scientist* looks especially at a number of the more common arguments. You can too, see <http://www.newscientist.com/article/dn11462?DCMP=NLC-nletter&nsref=dn11462>.

## Protecting People and Assets from Bushfire: Is there a Better Way?

... asks STEP Vice-president John Burke in this discussion paper

Bushfires are potentially devastating and regularly threaten lives and buildings. In urban areas like Sydney losses tend to be minimal because of the small sizes of bushland areas, hazard reduction programs and the ready availability of professional fire-fighters. Nevertheless, the 1994 fires showed that losses are always a possibility. The 2009 Victorian fires demonstrated the huge risks in sparsely settled forested areas.

### Urban Bushland

Current thinking for protecting Sydney residents from fire includes hazard reduction burning and, in new developments, asset protection zones (APZs) where low vegetation is cleared and trees thinned out so that the canopy is not continuous. Examples of the latter are the proposals for the UTS, Lindfield site and the Adventist Hospital site at Wahroonga. The creation of these APZs around the perimeter of relatively small areas of bushland means that a high percentage of the bushland can be lost. The purpose of this exercise is to propose that there may be a better way to provide asset protection while preserving larger areas of bushland.

### The Problem with APZs

Cleared APZs, *prima facie*, solve all the problems. Fire is kept away from buildings, there is good access for fire fighters and some people may even appreciate the mown parkland that the APZ becomes. Apart from the loss of bushland, however, the concept of APZs is dangerously flawed. To be effective they must be continually maintained. This is generally easy in the enthusiasm of the first few years when the requirements are fresh in everyone's memories. As time goes by, however, memories dim. New property managers and owners come along, the manuals are lost and forgotten and a 20 years period without fire means that a whole new generation may be in charge. APZs will often be allowed to regrow and thus present a hazard rather than the absence of one. The 2009 Victorian fires seem to illustrate that even cleared but grassed areas will support a fire. Thus even low levels of fuel at ground level can still pose a threat to life and property.

### The Threat from Bushfire

Bush that comes right up to buildings obviously is very high risk. Otherwise, radiant heat and embers are the source of ignition. APZs provide little protection from embers as they can travel for kilometres. Bushfires can create their own weather involving strong and swirling winds and buildings, including those remote from the fire front, need to be protected from ember attack. Radiant heat can be intense and it is for this reason that APZs are created. As mentioned above, however, they may not always be effective.

### An Alternative

Fire in buildings is a common enough occurrence and advances have been made in the engineering of structures to make fire less likely and to deal with fire when it does occur. One such development is the treatment of the walls of factories and warehouses; buildings that seem particularly prone to fire events. Depending on the location relative to other buildings and on other factors, such buildings are typically provided with masonry exterior walls with a four-hour fire rating. This is easily achieved, for instance, with 175 mm thick

reinforced or prestressed concrete walls. Such buildings regularly withstand intense and long lasting fires without the walls being breached. Should the steel roof beams fail under the intense heat, the walls are designed to fall inwards, thus reducing the risk to fire fighters. One point of relevance, however, is that fire fighters are able to operate safely only metres from a fire far hotter than experienced in urban bushfires. A paper and solvent warehouse can burn and build up heat for many hours. A bushfire has typically passed in minutes with most of the dangerous fuel consumed.

An alternative to large cleared APZs in urban areas, therefore, is to build masonry fire-walls that protect assets from the radiant heat that is created where most of the fuel is close to the ground. These walls would look much like the noise walls that one sees alongside freeways.

### Masonry Fire Barrier Walls: Cost

In the context of projects costing hundreds of millions of dollars, the capital cost of such walls are negligible. Their cost is offset by not having to clear the APZ and, more importantly, by not having to constantly maintain the APZ year after year, decade after decade. Their extensive use along roads points to their affordability.

### Appearance and Utility

There may be aesthetic objections to such walls. On big sites such as UTS and the Adventist Hospital, however, they would be no more objectionable than a fence. They can be architecturally designed in respect of colour, texture and shape and would more often be used where they are down-slope from buildings and therefore would only minimally interrupt views, if at all. They must simply become part of the built environment. Advice would need to be taken on an appropriate height but perhaps 2.4 metres would be sufficient.

### Performance in a Fire

In the event of bushfire, fire-walls would provide safety from radiant heat for building and for fire fighters. Access points through the walls, formed by overlapping, would allow escape points for fire fighters if required. Spot fires could break out from embers on the building side of these walls but fire would never escape on a continuous front and spot fires on mown lawns or garden beds are far easier to deal with than a fire front advancing across an entire cleared APZ. Importantly, the walls will be just as effective against a fire in 10, 50 or 100 years time. The same cannot be said for cleared APZs.

### Implication for Bushland

The conservation of large areas of urban bushland is a worthy outcome. Protection of habitat, biodiversity and the other attributes of natural areas are important. Walls will also provide a barrier against weed and other intrusions into bushland. In addition the walls will provide a convenient way of controlling water runoff. The walls can be designed to allow water to flow through or can be used to channel water as may be required by design criteria.

This short paper is intended to promote the hypothesis that fire barrier walls in urban areas will be more effective in protecting lives and property than cleared APZs and will allow the conservation of large areas of valuable urban bushland. In addition, their lifetime costs may well be less than that the establishment and maintenance of cleared APZs.

## Wendy Double: Bushland Pioneer

*As STEP makes plans for its future, we sometimes need to pause to remember those whose early actions in defending the bushland in the northern area of Sydney have meant that we enjoy a significantly better protected environment today. One such environmentalist is Wendy Double. Wendy Double was the inaugural president of TABS, the Thornleigh Area Bushland Society. Wendy served as president of TABS for over a decade. After TABS merged with STEP in 2007, she has continued as an active member of STEP. This is the first in an occasional series in which local journalist Barnaby Howarth profiles members of the local community whose hard work too often goes unheralded. Barnaby writes:*

Although her modesty would never let her say so herself, how Thornleigh looks today is due in large part to Wendy Double.



In 1987, a group of concerned residents rallied together to stop a proposed rubbish dump in the bushland behind Thornleigh Oval. That proposal was squashed, however the need for a permanent organisation to preserve the bushland in the area was raised. Once the aims of the group had been defined, and a constitution written, TABS was born, and at the inaugural general meeting, Wendy was named as president.

One of the aims of TABS was to form bush regeneration groups so

that residents could learn how valuable the bushland is, and keep the vegetation healthy.

From day one Wendy was never shy about getting her hands dirty. In one of her first acts as president, she completed a bush regeneration course at Hornsby Technical College. And the environmental education didn't stop there. Wendy went to Sydney University some years later to study a native plant identification course which helped her to lead informed bush walks in the Lane Cove National Park.

Thanks to her countless day's bushwalking, Wendy knows the bush walks around Thornleigh more intimately than most. But the walk she's still considers her favourite is 'Going out to the lookout, because there are lots of wildflowers there, and you get to know when they come out and what to look for.'

Thankfully Wendy and the early members of TABS had the foresight to realise the importance of avoiding rubbish being dumped in the bush. To make sure Thornleigh didn't become victim of this thoughtlessness, TABS took steps to make sure residents were aware that they needed to be proactive to keep the bushland pristine. To ensure the beauty of the area was maintained, TABS took several steps to bring environmental conservation out in the open. One such step was to take part in the first Clean Up Australia Day, and this event has continued every year since.

TABS also addressed the damage to the environment being caused by medium density housing. Due to an increase in construction, building waste and run off were spilling over boundary lines and into the bushland. Wendy asked the mayor of Hornsby Council to examine the site, which he promptly did and placed a ban on work in the area until all debris was removed from the bush.

Leading by example is the way Wendy has always done things, and this, she believes, is one of TABS' greatest legacies. It is the visible presence that has encouraged so many to keep the area clean. Wendy believes that 'Once we (TABS) started bush regeneration people stopped putting rubbish in the bush'.

Living in the natural wonderland that is Sydney's North Shore is a privilege that is not available in many other parts of the world. The scenes that we are lucky to enjoy everyday, the bushwalks, the trees, the streams, the birdlife would not be what they are today without the early work of both TABS and STEP.

And TABS would never have made it to where it was without the work of Wendy Double.

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## Notices and Information

### **Ku-ring-gai Preservation Trust: Address by Brad Hazzard MP – 2 July**

*Planning in NSW – Failure, Fury and Reform* presented by Brad Hazzard, Shadow Minister for Planning at 8 pm (after the AGM at 7.30pm).

**Venue:** Killara Uniting Church Hall, corner Arnold Street and Karranga Avenue Killara

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### **Easy Care Gardening Anniversary: Open Garden and Market Day – 8 August**

Easy Care is a gardening service for the frail aged and disabled on a pension ([www.easycaregardening.org.au](http://www.easycaregardening.org.au)). They celebrate their 21<sup>st</sup> anniversary on 8 August in the garden of the listed historic home Claremont. Opening hours are 10 am to 3 pm and there will be market stalls, high profile speakers and gardening demonstrations.

**Venue:** 40 Telegraph Road, Pymble

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### **Australian Plants Identification Course – 15 August to 12 September**

The North Shore Group of the Australian Plants Society again presents this popular course by Dr Joan Webb on Saturdays from 9 am to 1 pm. The course will have a limit of 24 attendees and the course fee is \$130. Registration can be made with Fred Langshaw (9449 1541) or download the registration form from [www.blandfordia.org.au](http://www.blandfordia.org.au).

**Venue:** Education Centre, Ku-ring-gai Wildflower Garden, St Ives

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### **Rippon Grange/John Williams Site: Proposed Hospital Development**

Waterbrook have applied to develop a 129 bed hospital, based on a design that uses three massive 5 to 6 storey hospital blocks. The heritage dwelling Rippon Grange is to be used as a public café! As a Part 3 Application, local council and community decision-making has once again been removed and the matter will be decided by the Minister for Planning. Residents who plan to make comments have until 17 July to do so. See [www.wahroonga.org](http://www.wahroonga.org) for details.

## Tapping into Stormwater: Are We Doing Enough?

*... asks Cameron Tomkinson. On recent travels Cameron observed environmental issues affecting regional Australia along with pioneering environmentally sustainable solutions.*

As I came to the end of a five week tour largely based in South Australia I could not help but feel that I had experienced at first hand elements of environmental devastation. I visited the Moonta Mines State Heritage Area, which despite being out of operation since 1943, has large tailings heaps that are still completely barren of any life, not even a single weed. I also toured the largest lead smelter in the southern hemisphere, located in Port Pirie, one of whose aims it is now to reduce the blood lead levels of local children in the town and surrounding area's to below the World Health Organisation standard of 10 micrograms per decilitre of blood by the end of 2010.

However, of most interest to me were the impacts of water; or its absence. There were glimpses of dead fruit groves and vine blocks with brown and black fruit still clinging on as I drove past. From Waikerie to the semi-desert town of Mildura they appeared, sacrificed due to a lack of irrigation water from the Murray. I only wish that I could have had the opportunity to travel onto the Murray's final destination at Lake Alexandrina to see the effects of successive governments' over-allocation of water entitlements and several years of drought.

There were some good news stories however. Until recently, little attention has been paid to the reuse of stormwater. In most towns and cities, stormwater runs directly into a dedicated drainage system designed to carry the water away into natural waterways or the ocean. Our cities have largely been designed to collect and dispose of rainfall as quickly as possible. As a result, we are wasting an enormous quantity of water. In the Sydney City Local Government Area (LGA) alone, it is estimated that around 16,870 megalitres of stormwater runoff is discharged to bays and harbours each year from rain which falls in the LGA, which is approximately half of the total water consumed in the LGA each year.

Nevertheless, water sensitive urban design is starting to be considered by some councils, especially in South Australia. South Australia is Australia's driest state and nobody can accurately predict if the continuing below average rainfall conditions affecting South-Eastern Australia will become a new norm. A drier climate has led to innovative changes to storm water management being undertaken by Salisbury Council in the form of the establishment of some 53 urban wetlands to manage storm water run-off. After being collected in basins the water is filtered through the wetlands where the reeds remove nutrients from the water, mud takes out the metals and the sun's rays destroy bacteria.

Interestingly Salisbury Council is also storing some of this wetland-treated water by subsequently pumping it into existing underground aquifers. This water can then be re-extracted when required. Apparently water occurring naturally in the aquifers does not mix with the treated storm water due to a difference in densities. The CSIRO is currently exploring the potential of such aquifers to act as massive natural water storage tanks, and the ability of naturally occurring microbes within the aquifers to actively clean the storm water to a standard fit for drinking. While these plans were initially met with community scepticism, Salisbury Council is now aiming to move from 11 to 40% reliance on recycled water, with every percentage point gained reducing their reliance on Murray River water, leading to real environment flow benefits.

Water collected in dams, treated and piped to taps across Australia is still the norm. Water entering into storm water drains can potentially be contaminated with oil, litter, phosphorus, potassium and heavy metals. The use of natural measures to reduce such contaminants has been shown to be effective in the Salisbury wetlands. Sydney has an underground aquifer system that could be used to store and supplement our domestic or industrial water requirements; what are the chances of building similar urban wetland systems here to treat storm water before it can adversely affect native bushland, creeks and rivers?

### STEP Committee

Barry Tomkinson – President  
John Burke – Vice-president  
Helen Wortham – Secretary  
Jim Wells – Treasurer  
Robin Buchanan  
Tim Gastineau-Hills  
Michelle Leishman  
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