STEP Matters

Number 142, November 2007

Another Year Gone!

This is our fifth and last newsletter for 2007. In it we tell you about the remarkable student who has won the STEP Young Scientist award and cover quite a variety of other subjects that we hope you will find interesting.

2008 should see the resolution of the future for UTS, Lindfield and, despite our objections to the process being used, we are confident that bushland can be saved there and added to the national park. Fingers crossed! We wish we saw as much hope for the Adventist Hospital site. The potential there for an environmental and traffic disaster is quite high. One difference between it and UTS is that UTS is public land now whereas the Adventist site is private.

As we report below, the long campaign by Nancy Pallin and the Bluegummers may well come to a successful conclusion in 2008. Their persistence and effectiveness is inspiring.

Apologies for the commercial for *Sydney's Natural World* below but we do believe that this is a landmark book that documents what we now have in Sydney and what we strand to lose. It also makes an excellent Christmas present! Your support in buying our publications allows us to make grants and to keep fees low.

Best wishes for Christmas and 2008 to all our members!

Good Blue Gum High Forest News

The campaign to buy the last block of land to complete the preservation of the Blue Gum High Forest between Mona Vale Rd St Ives and Rosedale Rd Gordon received a boost in October when Brendan Nelson announced that the Commonwealth would add another $200,000 to the $150,000 that they have already pledged. This is important for the cash but also because it sends a message to the current land owner that they are up against more than just a local campaign.

It is now up to Ku-ring-gai Council to negotiate with the owner. The conflict is headed for the Land and Environment Court next year unless it is settled earlier. Court costs would be absurd in the circumstances – the money should be put towards the purchase of the land. But of course people are not always so rational.

Public donations are now heading towards $60,000 and these demonstrate the depth of community feeling as much of this money is in small amounts from individuals. STEP has offered $5,000 in the event that the purchase is achieved. Should you wish to donate, go to the Blue Gum section of the STEP website.

STEP Traditional End of Year Barbecue

The usual Christmas get-together will be from 4.30 pm on Sunday 16th December in the park behind Leuna Ave at the end of The Broadway at Wahroonga. Harry and Neroli Lock will supply the barbecue and hot water – BYO food and everything else. This is a good chance to meet other STEP members – see you there.

STOP PRESS

Environmental walk and talk with Nancy Pallin with The Sydney Bushwalkers Saturday 2nd February 2008 from St Ives to Roseville. See the STEP web site for details.

Christmas Gifts from STEP

Your environmentally conscious family and friends will appreciate a book or map from STEP.

The **walking track maps of the Lane Cove Valley and of Middle Harbour** are high quality productions that any walker would appreciate!

For the more serious student of nature there is the **Field Guide to the Bushland of the Upper Lane Cove Valley**. This is a remarkable and beautifully illustrated book that covers the history, geology, flora and fauna of the valley and more besides. It contains details of 15 bushwalks with descriptions of the natural history features of each walk.

If you have not yet obtained a copy of John Martyn's **Sydney's Natural World** then there is plenty of time to do so. There is a copy of the brochure on our website. This is a landmark book that exults in the beauty and uniqueness of the natural world around us. It makes a wonderful present for conservationists and cynics alike. It will convert the latter!

There is an order form at the back of this newsletter and also on our website.

A great short video on global warming
http://au.youtube.com/watch?v=bDsIFspVzfI

STEP Inc
Community-based Environmental Conservation since 1978
PO Box 697, Turramurra, NSW 2074
secretary@step.org.au www.step.org.au ABN 55 851 3472 043

STEP Continues to Support Young Scientist Awards

The Science Teachers Association NSW holds annual awards to celebrate the achievements of young school students who conduct scientific investigation. This year the awards presentation was held at the Powerhouse Museum. Of 700 entries from across the state 50 finalists were recognised at the 2 hour ceremony. As in former years Dr Karl Kruszelnicki entertained parents, teachers and students with an animated Powerpoint presentation on how scientific equipment is transported to Mars and methods for transmitting images back to Earth.

STEP has been supporting the Young Scientist Awards for several years now and this year a cheque for $200 was presented to **Nina Pinto of Hornsby Girls High School**. The research topic she chose was: *The habitat of the marine snail,* Nerita atramentosa*, and the tenacity of its foot in various salinities.* STEP judges, Syd Smith and Michelle Leishman regard Nina's work as research of the highest order and said 'The project was rigorous, kept to strict scientific method and was investigated over a long period of time. Records were highly detailed, expertly interpreted and further hypotheses submitted after conclusions were drawn. STEP is very concerned with environmental degradation and the general decline in sustainability practices. STEP believes Nina's project provided a window into further research for climate change, sea level fluctuations and the possible influence of people in a coastal environment. It is gratifying to see young people contributing to our knowledge of the future and even educating others who have long left school.' STEP judges must have been on the ball because Nina was later presented with the Young Scientist of 2007 Award. This means Nina is now eligible to attend an international science student's conference in the USA next year.

Syd Smith who attended the award ceremony and presented the awards on behalf of STEP also presented a highly commended certificate to Ellenore Forrester of Redeemer Baptist School in Parramatta for her excellent research into an Enviropump. Ellenore is a student in only Year 7 but showed great potential as a future scientist.

Book Review

Energy Production – Global Warming

STEP committee member, Jim Wells, has been to hear Dr Mark Diesendorf speak and has read his recent book

On October 13th a number of members had the privilege of hearing Dr Mark Diesendorf of the University of NSW speak on the topic of his latest book 'Greenhouse Solutions with Sustainable Energy' (UNSW Press, 2007). The occasion was a festival 'Your Future is the Natural World' held at the Turramurra Masonic Hall.

His presentation was factual and thought provoking. His book is to be thoroughly recommended, written in a very readable style. It is comprehensive with chapters on all the main alternatives to coal; technical enough to be a good reference but still highly useful to the non-technical reader.

One way to summarise the position is to present a scenario for the supply mix for Australia's electricity generation in 2040 (Clean energy scenario 2 as shown on page 45). This is

Black coal	9%
Hydro	7%
Oil	1%
Bioenergy	28%
Gas	30%
Wind	20%
Solar	5%
Total	100%

Note that nuclear is not included, nor brown coal which is currently a big source in Victoria. In this scenario there will still be a lot of greenhouse gas being emitted.

The one figure that does seem very high is that for bioenergy, derived from biomass. Biomass is material produced by photosynthesis (ie plants) or is an organic byproduct from a waste stream. To produce electricity the material is burnt in a thermal power station. Greenhouse gases are produced but photosynthesis compensates so the process is self-sustaining. As with other 'fuelled' sources, the energy use in production and transport of the material cannot be ignored.

What is also relevant here is peak oil. If petroleum declines as a source of transport fuel bioenergy will expand enormously. Already the price of palm oil has soared. See the article in the Sydney Morning Herald, Saturday October 13th entitled 'Green fuel gets a black name' p25.

It is not surprising that solar is so low at 5%. It is just too expensive.

There is a very useful table on p355 of the book summarising costs. This is quite detailed; Diesendorf is well aware of the difficulties of assessing total cost given that some costs are periodic (capital expenditure and some maintenance) and some recurrent. Space here precludes showing too much detail but the total costs for selected items in cents per kW hour are (2005):

Black coal, NSW	3.5
Wind farm, 50mw, 'good' site	8.3
Residential photovoltaic (solar) grid connected, Sydney	47.4

Diesendorf does say that solar cost might come down to 19.2c per kW hour with sliver[1] or chrystalline silicon on glass technology.

The capital cost for wind is much higher than for coal but so also is 'operations and maintenance, excl. fuel'. Wind turbines would not be easy to maintain. Diesendorf is enthusiastic about wind power and doesn't seem too concerned about the 'blot on the landscape' problem.

Read the book if you can. It has sold well, indeed it is out of print but should be available shortly. Ku-ring-gai Council library has a copy.

A set of lecture slides from Dr Diesendorf can be found at http://www.ies.unsw.edu.au/events/GHsolutionsWithSustEnShort.pdf

---

[1] Sliver technology was developed by the Australian National University's Centre for Sustainable Energy Systems. See http://solar.anu.edu.au/level_1/projects/sliver_proj.php

How Will Weeds Respond to Climate Change?

STEP committee member, Dr Michelle Leishman, brings us up to date on the science of weeds and climate

By now the general community is very aware of climate change and has become familiar with once-unfamiliar terms such as greenhouse gas emissions, carbon trading and sustainable energy. However fewer people are aware of the likely impacts that climate change will have on ecosystems, habitats and individual species. The planet is currently facing the triple-whammy of climate change, land clearing, and invasive species, yet we know relatively little about the likely effects of these factors acting together.

Is it likely that invasive plants (weeds) will do better or worse under climate change? The answer depends a lot on the weed in question. Climate change includes the direct effect of elevated CO_2 on plant growth, the direct effect of changed climate (such as increased temperature and reduced rainfall predicted for SE Australia), and the indirect effects of changes to species interactions (such as pollinators, seed dispersors, herbivores) and to ecosystem processes (such as nutrient cycling). But here are some generalisations that we can use as a starting point:

1. **Elevated CO_2 is likely to favour fast-growing species**

Many weed species have characteristics that enable them to grow fast to take advantage of open spaces and to outcompete other species. So it is likely that these fast-growing weeds will get an even greater advantage under higher CO_2 conditions.

2. **Elevated CO_2 is likely to favour vines**

Vines are a plant growth form that is particularly responsive to additional CO_2, largely because all the additional carbon captured can go directly to growth rather than to storage in wood. Many exotic vines are considered to be transformer species, dramatically affecting native ecosystems, and they are listed as a key threatening process under the NSW Threatened Species Conservation Act.

3. **Climatic envelopes for species will shift towards the poles or to higher elevations**

The current climatic conditions at any particular site will slowly change eg with a 3^{O} increase in temperature, Sydney will have a climate like that of Port Macquarie. Plants will need to adapt to the changing climatic conditions, move or face extinction. Many weed species are tolerant of a wide range of climatic conditions and are also particularly good at dispersing (eg many weeds have wind-dispersed seeds or have fruits that are dispersed long distances by birds). Thus it is likely that weed species are likely to do relatively better under a changing climate than many native species that have limited climatic tolerances and limited dispersal ability. Of course, in the past plants were able to move around the landscape as climates changed. However with current climate change, the rate of change is **much** faster than previously experienced, making life even tougher for plants with limited dispersal ability. Furthermore the landscape is no longer covered by continuous vegetation so that plants have the added problem of having to disperse across a landscape that is now developed for housing or primary production.

4. **Disturbance favours weeds**

Many weed species are particularly good at dispersing to and establishing in open spaces, such as along roads and in cleared areas. Climate change is likely to result in additional disturbances on both regional scales (such as more storms, flooding & bush fires) and local scales (e.g. death of plants due to extreme events such as heatwaves or frost). It is likely that the fast-colonizing and fast-growing weedy species will best be able to take advantage of open spaces created by these disturbances. For example, Athel Pine was able to invade river systems of Central Australia after the dramatic 1974 floods, *Miconia* species have been able to invade a much larger area following Cyclone Larry in Queensland, and many weed species (such as pines & broom) flourish after fire.

There are other miscellaneous factors that may contribute to weed success under climate change. For example, the horticultural industry is keen to promote 'drought resistant' plants for gardens. In 1996 Mexican feather grass was introduced into Victoria as a 'drought resistant' grass. It has since become very invasive and $39 million has been spent trying to eradicate it. Similarly the biofuel industry is set to expand dramatically, however some of the biofuels being considered are known to be highly invasive. On July 30 this year The Australian reported 'The jatropha bush seems an unlikely prize in the hunt for alternative energy, being an ugly, fast-growing, poisonous weed. Hitherto, its use has principally been as a constipation remedy. Very soon, however, it may be powering your car. Almost overnight, the unloved *Jatropha curcus* has become an agricultural and economic celebrity with the discovery that it may just be the ideal biofuel crop, an alternative to fossil fuels for a world dangerously dependent on oil supplies and deeply alarmed by the effects of global warming.' That's very scary indeed.

Climate change will result in dramatic changes to the vegetation that we are familiar with. The composition and abundance of plant species will change to the extent that the plant communities we recognise, and currently try to conserve, may not be recognisable to our children. It is likely that vegetation will be dominated by short-lived weedy species and that species diversity will be much reduced. This may seem like the 'black armband' view of climate change, but it is critically important that we understand the implications of climate change if we hope to mitigate it and its effects on our planet.

What can we do at a local level?

We can try to foster understanding of these issues among land managers such as our local council and the National Parks & Wildlife Service. We can encourage the conservation of north-south vegetation corridors to allow species to migrate. We can consider using seeds from a provenance 100 km or so north rather than locally for longer-lived species in bush regeneration projects. We can even consider planting particularly vulnerable species into their new predicted range rather than leaving them isolated in a patch of land that will not suit them climatically in 20-30 years. We can also keep our eye out for warmer-climate species that appear to be increasing their range so that we can control them before they become a problem. For example the extensively planted hedge *Murraya* is invasive in the Brisbane region – how long before it finds Sydney's climate suitable to allow it to become invasive in our bushland?

Aussie Native Plants in the Northern Hemisphere

STEP committee member, Dr John Martyn, has been travelling and can't help noticing things

On a recent trip to Britain and North America I was surprised and delighted at the number and range of Australian native plant species now featured in parks, gardens and even planter boxes and hanging baskets, though some of them have become a local weed and management problem.

Bottlebrushes

We were in UK in early to mid summer. Bottlebrushes (callistemons) were flowering in gardens all over and available at most plant nurseries. In early June *C. citrinus*, a Sydney native, erupted into bloom in the garden of my in-laws in south Dorset (we had bought it as a present 6 years previously). It is rooted in a heavy, calcareous clay soil, comfortably coping with leaden, soggy winters, frost, and hard-baked or humid soaking summers. The same species is featured as hedges in the Eden Project ecological garden in South Cornwall, and in garden shrub plantings in Marin County, California. In Britain the tougher and more wiry *C. linearis*, also a Sydney native, has been available for many decades. It is usually less showy, but where cared for *C. linearis* can be much more floriferous than its battered wiry specimens growing wild in Sydney bushland, and really uplifts an otherwise conservative garden. It survives at least as far north as Nottingham.

Eucalypts

Eucalypts are grown all around the world but only a handful of species are widely planted. *E. gunni*, a Tasmanian native, is the most common garden species in Britain. It has rounded, kebab-style juvenile leaves beloved of florists, and grows rapidly into a small to medium tree. The Brits generally can't cope with this growth rate and often lop the trees or remove them in panic when they appear to be taking over their pocket-size gardens, or when the neighbours start complaining! (did you know that there have been two murders in Britain allegedly related to neighbourhood views blocked by the fast growing conifer *Cupressus leylandii?*).

There are a few Tasmanian blue gums (*E. globulus*) in Britain, again often the victims of savage lopping when they reach for the sky. In California however it is a different story. In Marin County near San Francisco there are forests of them on many hillsides, with mature trees and abundant saplings. I entered one of these forests on a searing hot day expecting to feel a sense of coming home. Instead the distinctive, antiseptic, eucalyptus-cat pee aroma assaulted my nostrils – does koala pee smell like that? The environment was actually quite alienating. There were almost no other plant species in the forest; and then I read the information notice from the local parks board. Apparently the juvenile forest is descended from a few trees planted along a ridgetop trail many decades ago. They have now spread right down into the adjoining valley and have created a worrying fire hazard. They are also displacing the very beautiful native oak woodland.

The only other eucalypts I saw in California were both WA natives, *E. caesia* - 'silver princess', and of course *Corymbia ficifolia* - red-flowering gum or 'crimson-flowered eucalyptus'. These have to be among the most spectacular of the world's small ornamental flowering trees. The red-flowering gum is absolutely in its element in San Francisco with the cool, maritime overlay to the summers resembling its home territory of WA's south coast.

Miscellaneous Flowering Ornamentals

There is a bias towards mauves and purples in many of the smaller Aussie natives cultivated in the northern hemisphere. *Scaevola*, or fan-flower, is commonly grown in tubs and baskets. I saw it in full bloom in southern Britain, Yorkshire, coastal Connecticut and Stratford, Ontario, though it would be unlikely to survive winter outdoors in the last two places.

There were three delightful sightings in Sausalito, California, just across the bridge from San Francisco. There was a large specimen of *Melaleuca nesophila* (WA), covered in mauve pom-poms, growing near the ferry terminal. Nearby on a jetty among the quaint, ornate houseboats there was a tub with the WA native hibiscus *Alyogyne huegelii*. Its huge, floppy, open, mauve hibiscus flowers made the otherwise sparsely-foliaged shrub a real feature plant. A large patch of Aussie native violets (*Viola hederacea*) grew next to the shady wall of a condominium across the road, adjacent to a sturdy *Dicksonia antarctica* tree fern.

Climate Change?

Maybe climate change will encourage the growing of more Australian native plant species over there. Tales of warming are on everybody's lips and they are far more than just anecdotal. Our friends in central New York State tell us they used to have a cumulative snow cover of 140 inches in winter, starting first week in November. Now snow rarely persists at all for very long. They now see turkey vultures regularly – they were previously a bird of the southern half of the US. In Britain flowering and fruiting now begins weeks earlier, and some migrant bird species no longer head south for winter. It was hoped that the wine industry would benefit; and it would too if only it could stop raining for long enough!

Native Trees Key to Cooling Climate

Extensive clearing of native trees is making Australian droughts hotter and is an under-recognised factor in climate change, research shows. The study by researchers from the University of Queensland and Queensland's Department of Natural Resources and Water shows that land clearing made the 2002-3 drought in eastern Australia 2°C hotter. The research also found average summer rainfall has decreased by between 4-12% in eastern Australia and by 4-8% in southwest Western Australia because of land clearing. For the full article go to *ABC Science* at -

http://abc.net.au/science/news/stories/2007/2073363.htm?source=cmailer

The Lane Cove Valley Freeway Saga Draws to a Close – Perhaps!

The F3 to M2 Link Resolved

STEP has always been aware of the danger to urban bushland posed by the old Lane Cove Valley freeway corridor. The original corridor started at Pearces Corner at Wahroonga and crossed Fox Valley Road near Lucinda Avenue and then the Comenarra Parkway just east of Fox Valley Road. It then travelled parallel to The Broadway and across bushland to South Turramurra, which it bisected, crossing Kissing Point Road near Buller Street. The corridor then entered bushland and ran south of West Pymble, crossing the Lane Cove River and emerging at Alma Street, Macquarie Park. It then crossed Epping Road near Delhi Road and travelled in bushland as well as over the Lane Cove River to meet Burns Road at the Fig Tree Bridge at Linley Point. There was also a corridor from the Pacific Highway at Boundary Road, Roseville to Delhi Road along Bluegum Creek. The planners appropriated all the green bits on the map as being vacant land waiting for a use! The environmental and urban destruction would have been immense.

In 1986 a small group, including STEP members, walked the whole route to get a first hand look at what would be lost. In 1987 STEP produced a position paper on the freeway. This involved us coming to grips for the first time with traffic engineering. What was very helpful was the report of the 1983 parliamentary enquiry into the Warringah Transport Corridor known as *The Kirby Report*. For the first time we came to understand the nature of radial freeways in cities and concepts such as the propensity of new main roads to induce additional traffic and, indeed, to affect where people decided to live and to work. We have ever since called this process 'demographic feedback'.

Roads 2000 Study

In 1987 the RTA forerunner, the DMR, published *Roads 2000* which proposed a road construction programme until 2000. The corridors from Epping Road to Linley Point and along Bluegum Creek were discarded at this time – that was a great gain. In addition we met with Nick Greiner at Parliament House before he became Premier who wrote to us '—my unequivocal undertaking and that of the Coalition that we have no intention of building the Lane Cove Valley Freeway.' We were getting somewhere!

North West Sector Road Study

In 1989 we responded to the *North West Sector Road Needs Study* published by the RTA for comment. This is where the terms B1, B2, B3 etc were introduced to describe the 9 alternative routes. Our response took a huge amount of committee time. The Coalition Against Lane Cove Valley Freeways and People Against Valley Freeways were formed and people from the wider community became involved. Elaine Malicki was very active throughout. The government proposed the Castlereagh Freeway, which was to become the M2, and we made submissions in response to the EIS. Of course the M2 was eventually built but with many more environmental safeguards than had the community not been involved. In 1990, however, the government announced the release of the B1 corridor from South Turramurra to Macquarie Park. This was a major victory but the B3 route through Wahroonga and South Turramurra was still very much on the agenda as the RTA nominated it to be built in their response to the *North West Sector Road Needs Study*.

Another consultant's study into the need for the M2 was carried out in 1991. STEP was of course involved. It was not so much that we opposed roads – we all use them. We did, however, want roads to avoid urban bushland and we had a few additional points to make including;

- The need for the whole of the metropolitan area to be subject to a total transport plan not carried out by the RTA
- The need to explain 'the Los Angeles Effect' whereby urban freeways increase rather than decrease traffic congestion
- The need for a population plan and a design for transport facilities for the proposed maximum population rather than proceeding ad-hoc.

In other words we wanted to see the key issue as being the sort of Sydney we shall have in 25, 50 and 100 years rather than whether the people at Cherrybrook would be able to get to town faster the next year. We are still beating that drum today as all the freeways congest during ever lengthening peak hours and we keep building in an ad-hoc fashion.

In July 1995 the government abandoned the B2/B3 corridor. STEP had a lot to do with that great result but so did others in the community - Ku-ring-gai Council, John Watkins MP, Elaine Malicki and others were crucial in the win.

Recent Studies and Enquiries

The 2004 *F3 to Sydney Orbital Link Study* looked at various options for connecting the F3 to the M2 and M7 and some options again traversed the Lane Cove Valley. They were, however, proposed as tunnels and so bushland was not so threatened. In our 1987 position paper STEP said '*The only logical method of providing the required high standard link is a further upgrading of Pennant Hills Road between Pearces Corner and the Castlereagh Freeway (the M2) after 2000'* and in our submission to the 2004 Study we said much the same except that a tunnel under Pennant Hills Road was now the means of upgrading it. The Study duly recommended the tunnel but there was vocal opposition to it and so a Review of the F3 to M7corridor was carried out by Hon. Mahla Pearlman AO this year. STEP made yet another submission and Judge Pearlman's August 2007 report confirmed the tunnel as the best option.

A submission to this latest enquiry by Mr Jim McCredie, President of the Chatswood West Ward Progress Association Inc said '*The choice of tunnels only for the SKM study is merely pandering to environmentalists, who want to preserve the weed infested fire hazard regrowth trees in the Lane Cove Valley.'* Jim obviously hasn't a clue about environmental values or the pristine state of most of the Valley bushland but we shall need to be eternally vigilant to ensure that this sort of thinking dos not team up with vested interests to, once again, propose to destroy all the green bits on the map.

In the meantime – we have had a win!

President's Report for the Year to October 2007

From the Annual General Meeting on 23 October

As STEP approaches the ripe old age of 30 we seem to be just as vigorous as ever as we attempt to make a difference in those areas that we see as important.

Committee
Your committee continued to meet monthly except for January when we have a well-deserved break. Following the amalgamation with TABS, Barry Tomkinson and Graham Jones joined the committee which brought the number to 11. We continue to make submissions, to serve on other committees and to do all those things required to make STEP an effective voice in the community.

Accounts
STEP continues to be in a strong financial position. Our solid membership base and sale of publications keeps us profitable and sufficiently liquid to be able to make grants and fund projects such as the publishing of *Sydney's Natural World*. Jim Wells continues to do an excellent job as treasurer.

Grants
We awarded Warrawee Primary School a grant of $2,500 to assist with maintenance of its bushland area and we continue to provide a cash prize for the Young Scientist competition. We have some trouble, however, in getting schools to submit applications for grants despite writing to many of them with invitations to apply.

Bushwalks and Talks
Walks were organised in March, April, May, June, August, September and October. Talks were held in March, May, August and the final talk for the year will be Alan Fairley at the AGM.

Newsletters
We publish five newsletters every year. Normally these have been four pages but the last three issues have been expanded to eight pages because of the number of issues we believe it is worth addressing. The newsletter and the walks and talks programmes are the main ways we communicate with members.

The Internet
We are now able to communicate with many of our members by email. This is useful for reminders of talks and bushwalks and for matters that won't wait until the next newsletter. STEP's website is expertly maintained by Tim Gastineau-Hills and we shall continue to add new features.

Issues
We have dealt at length in the newsletters with the issues of the year as we saw them and I don't propose to summarise them all here. All the newsletters are on the website. Suffice to say that the biggest threat to our environment is unrestricted growth. This drives everything from global warming to the loss of bushland and urban amenity in Sydney. No Australian government or opposition or major environmental group has a policy to deal with never ending exponential growth. That is shameful.

Neroli Lock
I note with regret Neroli's resignation from the committee. Neroli has worked very hard for a many years and deserves a break! She has our gratitude for her considerable contribution.

Sydney's Natural World
STEP's latest publication is now on sale before the official launch in November. John Martyn has produced a masterpiece that will help us demonstrate just why we are conservationists where urban bushland is concerned.

The Year Ahead
It would be nice to know that many of the problems, UTS Ku-ring-gai, the Adventist Hospital development proposal and the like, are going to be resolved easily and satisfactorily. They won't be, and so it will be more of the same over the next 12 months as we provide a voice for those who would like to see urban bushland preserved, finite resources conserved and who would like to see Australia's vast environmental problems better handled.

Finally
Thanks again to our loyal members. There is strength in numbers and those who support us by being members are essential to the viability of STEP. We look forward to continuing to work for a better world in the year ahead.

John Burke
October 2007

The Annual General Meeting

At the AGM there were two changes to the committee, the retirement of Neroli Lock as noted in the report and the election of Susie Gemmell. We welcome Susie to the committee and plan to exploit her many talents.

Noted author and conservationist, Alan Fairley, spoke to an audience of 40 after the AGM on rare and endangered plants of the Sydney region. Not many had appreciated that there were so many plants in those categories and that such plants were still being discovered. It was a very interesting and engaging presentation.

Willoughby Council does it for BGHF

The *Northside Courier* on 12 September 2007 carried the following article. Why couldn't Ku-ring-gai Council negotiate a similar agreement with the Bush School at Wahroonga?

> A section of Blue Gum High Forest on the Chatswood High School site will be protected after an agreement was reached between Willoughby Council and the Department of Education and Training.
>
> The council recently agreed to maintain the 4000 square metres of land in return for a five-year licence over the area. The Department of Education and Training granted the licence for a nominal fee of $1. The council has now rezoned the area as open space bushland.
>
> Bushland staff and volunteers will maintain the site. Although the council said it would have preferred to own the land outright, a spokesperson said the five-year licence was considered a good first step.

UTS Ku-ring-gai Campus

Make a submission

The consultants for the UTS have now lodged their Site Significant Site Study and Environmental Assessment of the Concept Plan with the Department of Planning (DoP) which is on exhibition until 30 November. This is where, under the guise of a professional approach to the issues, the consultant argues the case for UTS just as a debating team argues whatever case it is given. The result is a mixture of fact and opinion that it is easy to take issue with in many instances. All submissions are examined by the DoP which then advises the Minister, Frank Sartor, whether the project should proceed, proceed with conditions or not proceed. The chances of the third option are Buckley's.

STEP is preparing a detailed submission and would hope that some members will do the same. Because this newsletter will not be mailed until late-November we shall try to email those of you whose addresses we have. To access the Environmental Assessment and Concept Plan go to www.planning.nsw.gov.au/assessingdev/onexhibition.asp.

Local Native Fish

John Martyn is pessimistic about fish in the LCV

On the recent STEP walk to Bidjigal Reserve, Darling Mills Creek we saw lots of native fish, especially in Excelsior Creek, a northern tributary. These were Cox's gudgeon, a dark sandy-brown fish of about 8 to 10 cm in length with a broadish head and prominent pectoral fins. They spend much time motionless on the bottom and can be hard to see, and are easily mistaken for dead leaves or other debris unless they move. But like cryptic-coloured ground orchids once you find one you start spotting them everywhere, and we were seeing up to five fish in some pools.

Cox's gudgeon is also found widely through the Lane Cove catchment, or used to be! But this year they are hard to find. A recent walk down the upper Lane Cove River from Lorna Pass to South Turramurra did not produce a single sighting despite looking hard into pools where they have been easy to spot in past years. They have been elusive in some previous years but have eventually returned. It remains to be seen whether they will do so this time round. I also wonder what the major construction proposal for the Adventist Hospital may do to the water quality of the Lane Cove River system.

Make a difference

Get a friend to join STEP

Be kind to STEP's administration people who have to keep track – pay your membership when it is due on 1 July each year. Most have paid but some are outstanding – it really helps if we don't have to keep tracking overdue dues! If your address label overleaf has '07' on it you have not paid.

Send us your email address so we can let you know of events, changes to events, urgent issues and ask your opinions. Email to secretary@ step.org.au.

Order Form

Membership (only complete if '07' is shown on the address label overleaf)		Unit price	Quantity	Cost
Single	1 year	$16		
	3 years – saving of $8	$40		
Family	1 year	$20		
	3 years – saving of $12	$48		
Life		$200		
Sydney's Natural World — NEW PUBLICATION (cost to non-members is $60)		$50		
A Field Guide to the Bushland of the Upper Lane Cove Valley		$30		
Maps of Walking Tracks (cost to non-members is $20)				
Lane Cove Valley		$15		
Middle Harbour Valley. Sheets 1 and 2 Bungaroo and Roseville Bridge		$15		
Middle Harbour Valley. Sheets 3 and 4 Northbridge and North Harbour		$15		
Donation (donations of $2 or more are tax deductible)				
			Total cost including packaging and postage	

E-mail address .....

Payment made by (please tick one):

☐ cheque — send this completed form and a cheque (made payable to Step Inc) to the address below; **or**

☐ electronic banking — transfer payment electronically into our Westpac account (BSB: 032 089, account number 861312) and *either*:

- send this completed form to the address below; *or*
- send an email to secretary@step.org.au advising us of your name, address and details of your purchase.

Blue Gum High Forest, the Wianamatta Group and Phosphorus

John Martyn has provide us with this note

We live in a continent notable (or notorious if you are a farmer) for the low phosphorus content of its soils. The rocks of the Sydney Basin have an enormous range of phosphorus contents and our local geology features the extremes of that range. These reflect strongly in the soils, in our natural vegetation and also in our land use.

The Hawkesbury Sandstone is phosphorus poor as we all know, but the Ashfield Shale of the Wianamatta Group, and the Newport Formation of the Narrabeen Group were once explored for commercial phosphorus deposits after the discovery of phosphatic nodules in these strata. The exploration was unsuccessful but the background results are informative. The Ashfield Shale contains phosphorus at levels of around 0.2 to 0.9% P_2O_5, significantly higher than most basalts which tend to be less than 0.3% P_20_5. In contrast the much thicker and more extensive overlying Bringelly Shale, which underlies most of the Cumberland Plain, is relatively low in phosphorus; everywhere less than 0.2% P_2O_5. Ashfield Shale seems to underlie many of the fertile upland areas of the Sydney district: our own area with the BGHF, the Dural, Canoelands, Kurrajong and Bilpin fruit growing and pastoral districts, and even remote, cultivated ridges in the sandstone uplands like Colo Heights and Wheelbarrow Ridge.

There is more to phosphorus than just the content of the rocks, and though basalts contain only moderate amounts it occurs as disseminated tiny crystals rather than the phosphatic nodules of the shales. Basalts weather easily and the phosphorus may be more readily available. Interestingly there are interactions between laterite and phosphorus, and it appears that laterite has the capacity to scavenge and hang onto any phosphorus that is carried by groundwater, however the element is quite stable in the weathering process and rarely travels far except when transported as detrital grains.

Botanists Wanted

The Field Association of Botanists Sydney is being formed to help beginner botanists in plant identification. It seems that classical training in plant identification is being phased out at universities. If you are competent in this field and would like to help, contact Emma Gorrod on 0412 814 191 or e.gorrod@pgrad.unimelb.edu.au.

If undelivered return to:
STEP Inc
PO Box 697
Turramurra, NSW 2074