



STEP Matters

Number 151, August 2009

In this issue

In this issue STEP Matters examines the facts and fallacies that form the current debate on the recreational hunting of native and feral animals in our National Parks and other public lands. Beware the political predators!

Local issues are again to the fore, with the St Ives Showground Precinct options paper and discussions arousing a lot of community interest. A lot of good planning has gone into the formulation of the options but STEP has some real concerns as to their long term impact on the surrounding bushland if they are not professionally implemented.

The STEP Walks programme is in full swing and we carry details of the next four walks.

STEP Committee member Dr John Martyn writes about the role and functions of upland swamps in this region and ponders on how they and our local creeks are being affected by climate change, fire and urbanisation.

There has been much talk about the need to protect the global environment but our elected leaders have so far not actually done very much. They seem to prefer scoring political points at home and abroad to taking real action. We share with you the experiences of two people – one in the country, one in the city – who have taken some action on their own to “work for a better environment”. See the articles by Lorna Tomkinson and Matt Heffernan.

Following some recent heated debate in the pages of the *Hornsby Advocate*, we again rush in where many fear to tread by looking at the facts of cat ownership, with help from amongst others, the Cat Protection Society itself.

Finally, its subscription renewal time for some, there is a Christmas Special Offer for members and we look forward to seeing you all at the AGM in October.

STEP Annual General Meeting – 13 October 2009

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

The STEP AGM will be held at 7.45pm and will be completed prior to the talk by Lee Rhiannon (see below). 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.org.au). STEP members are encouraged to apply to join the Committee, which meets on average once a month. Further information is available from Barry Tomkinson on 0412 250 595.

STEP Talk - Speaker: Lee Rhiannon MLC – 13 October 2009

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

Topic: “The Politics of Population in Australia and its impact on meaningful Climate Change Action”

Last year parliamentary hearings in the UK concluded that the United Nations millennium development goals, including a development goal “to eradicate extreme poverty and hunger” will be difficult or impossible to achieve “without a renewed focus on, and investment in, family planning.”

The issue of population overload and its direct links to the destruction of the global environment is one of which our political leaders are well aware, yet many fail to address. It seems population is an issue they find too hot to handle, as do the media and many conservation groups.

STEP is therefore delighted that Lee Rhiannon has accepted our invitation to talk to our members on this important topic. STEP will extend a similar invitation to other political parties over the coming twelve months.



STEP Inc

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

STEP Supports the Nature Conservation Council (NCC) on the Shooters Bill

STEP members will be aware of the planned debate organised by the NCC on the proposed Shooters Bill. The NCC is the umbrella body in New South Wales for around 120 conservation and environment groups. The debate will take place on 25 August in the Ku-ring-gai Town Hall. (Details on the meeting are contained elsewhere in this edition of STEP Matters). Many STEP members last week volunteered their time to letter drop leaflets on this matter in the local community.

Background: CSIRO researchers recently reported that Australia has the worst mammal extinction record in the world. Against this background there has been much publicity recently about a bill introduced into the NSW Parliament by Shooters Party MLC Robert Brown. This bill aims to allow hunting of native animals in our National Parks. *Barry Tomkinson tries to separate the myths from the facts.*

The myths: Politicians are trained in the art of spin and there is some evidence of that in the way the recreational hunting supporters of the Shooters Party try to stake claim to the conservation moral high ground by stating that "hunting is conservation" because it kills feral animals. Newspaper advertisements this year by the NSW Game Council even use the slogan "Hunters – First in Conservation".

The Australian Shooters Journal (ASJ), which is the political voice of the Sporting Shooters Association, recently attempted to substantiate their claim that recreational hunting is of great conservation benefit (Volume 11, Issue1). A critique of their claims has been undertaken by the Invasive Species Council (ISC) of Australia (refer www.invasives.org.au).

ISC is probably the one conservation group which is most likely to support such claims as they themselves actively campaign for more effective control of feral species. However, the ISC can find little by way of scientific evidence to back the conservation claims of the shooting lobby, stating that "despite rhetoric about the 'abundance' of evidence, no scientific publications are referenced to support the ASJ's claims about the efficacy of recreational hunting for feral animal control and conservation". The ISC concludes that "feral animal control is being used as a justification by some state governments to open up public lands to recreational hunters" and while they agree that feral animal control is very important, "...there is no evidence to support the claims that recreational hunting is an effective or low cost option".

The facts: The proposed Game and Feral Control Amendment Bill 2009 recently had its second reading in the NSW Parliament. Amongst its proposals are the following:

- The Bill changes the definition of public land so that it includes national parks and other land reserves. As a result, the Minister will be able to simply declare any such land as public hunting land.
- The new Bill will also allow some native animals, currently protected by the National Parks and

Wildlife Act to be hunted, including twelve species of birds, many ducks and kangaroos.

- Recreational hunters were in 2002 granted access to over 2 million hectares of state forest. The purpose of allowing recreational hunting over a more extended area of public land is purported to be to provide low cost assistance in controlling feral animals.
- On the figures supplied by the Game Council over the past two years however, hunters have managed to kill less than 7000 feral animals in state forests per year, mostly rabbits, at a cost of over \$300 per feral animal killed.
- Generally the recreational hunting of feral animals has proven ineffective in controlling feral animal species, as day-time ground shooting generally does not result in the death of sufficient numbers of the feral animals to greatly impact on their numbers.
- The Bill also allows the creation of licensed private games farms. These allow recreational hunters to establish new areas for the release, breeding and shooting of game animals and birds. The likely impacts on this will be to see an increase in the number of feral herds in rural areas in which they are not presently found, and a reduced government capacity to undertake systematic control programmes.
- The Bill also overrides the ban on trap shooting in the Prevention of Cruelty to Animals Act, which means that animals could be trapped or bred in confinement until such time as the recreational hunter felt that they should be released to provide targets for their sport.
- Farmers in particular need to be concerned about such feral animal farming, as animals such as deer have demonstrated a capacity to escape from such reserves. Once out, breeding pairs invade neighbouring farms, as has happened not only with deer but also with feral pigs, rabbits and foxes. In fact the legislation specifically accepts the fact that such escapes will occur with introduced exotic bird species

So why would a NSW State Labor Government even contemplate voting with the Shooters for a Bill of this type? Because they need the Shooters support to get some aspects of their legislative programme passed.

If you too think that this not a good enough reason, you can attend the Public Meeting (see page 9) and/or take five minutes to visit www.naturens.org/nohunting and send our leaders a note opposing the proposed Bill.

Update on Key Issues

St Ives Showground Precinct Options

The second stage of community consultation on the future uses of the St Ives Showground precinct has commenced, with a draft options paper being discussed by Ku-ring-gai Council in early July. (This paper is available on the Council's website.) The land itself is owned by the State Government and managed by Ku-ring-gai Council, so that approval for any changes will notionally be required from both parties.

STEP has been involved in a number of key stakeholder discussions with Council on this matter, as well as attending site inspections. We well understand the need in the community for additional community and sporting facilities to cater for mandated population growth in this area. The STEP view is that these need to be catered for by making better use of the extensive Showground precinct and that this should happen without alienation or degradation of the surrounding bushland, particularly the valuable remnant of Duffy's Forest plant community still found on the site.

The current Council options are focused on supporting a wide range of "multi use" facilities, including a planned expansion of services to become a "regional purpose built education centre, eco-function centre and community nursery". There is also a significant sporting focus, which is likely to be on meeting a range of local needs, rather than the regional requirements of one or two of the major sporting codes. There have however been no firm decisions at this stage and the sporting clubs are still lobbying and submitting proposals.

STEP has particular concerns about the way in which the current proposals are planned to be implemented. We believe that they have the potential to have a long-term negative impact on the quality of the surrounding bushland in the Ku-ring-gai and Garigal National Parks. In particular, there will be threats to the endangered Duffy's Forest ecological community and two of the last remaining high quality water courses in this area. Much greater attention needs to be given to minimising the current impacts on Duffy's Forest to ensure its long-term survival. This would involve attaining agreement to a minimum sized reserve of core bushland with minimum edge effects, and being able to implement a suitable fire regime. To achieve this, relocation of some existing facilities may need to be considered.

STEP's submissions will focus on what we believe needs to be done to prevent any such long term damage occurring, with the view that in 50 years the entire precinct is held up as an example of how good planning and implementation can result in both

improved community facilities and a high quality bushland environment. Once a satisfactory design has been agreed, its boundaries and environmental protection measure should be locked-in in legislation so that we are not having the same discussion in another 10 years.

Wahroonga Estate Redevelopment Concept Plan (SAN Site)

There has been little apparent progress on this matter since submissions to the Department of Planning closed on 19 June 2009. The Department provided the proponent, the Johnson Property Group (JPG), with a summary of submissions on 26 June 2009. JPG are now required to respond to the issues raised in the submissions by way of a Preferred Project Report (PPR). We are advised that the Department are still in discussions with JPG on the preparation of their PPR. The Department advise that they have as yet not received nor accepted a final PPR from the developers. STEP understands unofficially that JPG may have been instructed to reduce the size of the development footprint of their proposal. We will however not know the definite detail until a final PPR is released, after which a final round of community consultation will take place, via the Community Reference Group of which STEP is a member.

Lane Cove National Park (LCNP) Plan of Management Review

STEP is one of a number of external stakeholders who have been invited to participate in the current review of the LCNP Plan of Management (PoM). These plans are prepared in accordance with the National Parks and Wildlife Act, and once approved, become the legally enforceable policies for the management of LCNP. The last PoM was completed in 1998, since when the Park has nearly doubled in size to about 700 hectares, mainly due to the Pennant Hills Park and Thornleigh Park additions.

Lane Cove is now the fifth most visited National Park in NSW, used by nearly 1 million people every year and surrounded by over 2000 residences along its boundaries. This level of human usage poses special problems as far the conservation of native fauna and flora is concerned. A high level of public consultation is taking place in establishing the key issues affecting the health of the Park, and a public exhibition of the draft PoM will take place prior to Ministerial approval of the final Plan. This is expected to be in place by mid 2010.

STEP Committee – 2009:

Barry Tomkinson – President
John Burke – Vice President
Helen Wortham – Secretary
Jim Wells – Treasurer
John Martyn

Tim Gastineau-Hills
Robin Buchanan
Michelle Leishman
Andrew Little

STEP Walks Programme

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.

Please book early (robert.bracht@hotmail.com, 0422 088 305).

Meet: 9.45 am at Visitors Centre

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

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

Cost: \$6 per adult

Length: 5–6 km

Estimated duration: 3–4 hours

Difficulty: Medium

Bring: Lunch, water and snacks

Sunday 20 September 2009: Ku-ring-gai Chase National Park

The boundary between private land and national park at Lovett and Elvina Bays, Pittwater, features an interesting contrast between ridge top coastal heath (Banksias, eucalypts and angophoras) and shoreline spotted gum forest (*Corymbia maculata*). There is also a diverse rainforest flora and possibly the highest single-drop waterfall in metropolitan Sydney. The spotted gum forest is a recognised Endangered Ecological Community, restricted in this region to richer soils below the Hawkesbury Sandstone. The focus will be on the diverse rainforest flora and spotted gum forest of Elvina & Lovett Bays.

Meet: 12:45pm for a 1pm start at Ku-ring-gai Chase National Park – West Head. Cost: Park entry fees only.

Length: 4-5 km. A moderate (medium difficulty) track with some erosion and some steep slippery track above Elvina Bay. Duration about 3 hours.

Bring: Water, hat, sturdy shoes and snacks

Note: Meet at the car park on West Head Road, at the start of Elvina Track (the first trail on the right after Coal and Candle Drive). Complimentary afternoon tea is provided at the conclusion of the walk.

For more information: Contact Tim Gastineau-Hills on 9449 2094 or 0419 251 586 or visit <http://www.step.org.au/walkstalks.htm>



Sunday 11 October 2009: Berowra Valley Regional Park

The walk will be led by Bill Jones and follows the Blue Gum Walking Trail. It is an interesting walk passing by a variety of vegetation communities including Blue Gum Forest and Sandstone Ridgetop and Gully Forest, with associated wildflowers.

Meet: 1.45pm for 2.00pm start at Valley Road near its junction with Rosemead Road, Hornsby.

Length: 4.5 km.

Estimated duration: About three hours.

Difficulty: Medium, with some steep slopes.

Bring: Sturdy walking shoes, snack food, water and a hat.

Sydney's upland swamps and climate change

Article by John Martyn. (Dr John Martyn is a STEP Committee member and well-known local author)

What are upland swamps?

Upland swamps are permanent wetlands and a characteristic feature of Sydney's elevated sandstone hinterland. They sit in the uppermost reaches of catchments, close to watersheds, in areas where elevation and/or proximity to the coast ensure a high and reliable rainfall. They lie in shallow depressions that permit only sluggish runoff of rainwater, leading to accumulation of acidic, peaty soil and growth of dense vegetation. Saturated soils are unsuitable for most common species of bushland trees and large shrubs, and the swamps are dominated by water-tolerant sedges, herbs and smaller shrubs. Over small areas our Sydney Basin, upland swamps contain the highest plant diversity of any shrub-dominant communities on earth. They are an essential element of our water catchments, filtering, moderating and protecting from evaporation the water flowing into our rivers and reservoirs.

Upland swamps began to develop when rainfall increased in the closing stages of the last glaciation at around 17,000 years ago and they are still slowly evolving. The landscapes that host them however are the much older remnants of a gently undulating fossil lowland land surface stranded on the plateaus and ridge lines by uplift, and rapid erosional deepening of the adjacent larger valleys. When you stand on the culmination of a ridge line and look across a sweep of undulating sandstone plateau, ignoring any deep valleys or gorges, you are in fact conjuring a picture of this ancient lowland.

Maddens Plains

You will almost certainly have seen an upland swamp even if you rarely get out of your car and walk in the bush. As you travel the freeway to Wollongong you gradually ascend the sloping ramp of the Woronora Plateau until, near its highest levels, the landscape opens out into broad green swales devoid of trees or large shrubs. This is Maddens Plains, the largest area of upland swamps on the Australian mainland. Back home on your computer you can revisit this landscape by zooming in with *Google Earth*. The swampy areas are easy to see because the vegetation contrasts are unusually sharp and the woodland edges of the swamps are clearly defined (though the way the freeway appears to slash across this fragile landscape is quite confronting).

A boggy day out

I was fortunate to visit an upland swamp recently with a party of botanists led by David Keith of the Department of Environment, Climate Change and Water, NSW. David is a specialist

in such ecosystems, and author of the splendid reference book *Ocean Shores to Desert Dunes*, a great resource for understanding our vegetation. We walked in to Uloola Swamp which is also on the Woronora Plateau, in Royal National Park about 3 km north of Waterfall Station.

Upland swamps and climate

In describing the morphology and flora of Uloola Swamp, David summarised some fascinating research on Maddens Plains. This had set out to establish their history of evolution, and fundamental parameters such as whether the swamp areas have changed in size and shape over time – the expectation had obviously been that they would have been shrinking in recent decades due to climate change. In the research programme the boundaries were carefully mapped on old air photographs from the early 1960s, and the outlines compared with those delineated from modern images. The surprising result was that the swamps had expanded in area by about 10% over a 40 year period.

Detailed climatic records are available for the Woronora Plateau because it is a water supply catchment. These date back to the 19th Century and show an increase in precipitation culminating in the 1960s, followed by a leveling off towards the present day. But, unexpectedly, evaporation rates had decreased in this latter period. Clearly, the effects of global warming have not showed up in these studies in the way they were expected to – so what else is going on?

Global dimming?

In the mid 1980s, climate researcher Atsuma Ohmura discovered that solar radiation had declined by approximately 10% over the previous three decades and subsequent studies by other workers confirmed this (source - *Wikipedia*). The term "global dimming" was coined, and this process is capable of explaining at least some of the climate records and effects for the Woronora Plateau catchments and swamps.

Upland swamps and fire

When you are dealing with a vast sweep of bushland on Sydney's sandstone fringes, obviously the effects of fire must be considered, especially as fire frequency and intensity is predicted to increase with global warming. On our visit to Uloola Swamp it was explained that major fires had passed through in 1994 and 2000. The vegetation had clearly recovered impressively and we were standing in chest-high coral fern peppered with swamp banksias (*B.*

robur), and other shrubs plus monocots. At the transition from swamp into woodland there is a dense belt of shrubs dominated by heath banksia (*B. ericifolia*), conesticks (*Petrophile pulchella*) and dagger hakea (*H. teretifolia*). These shrubs require several years to mature and set seed, and too great a fire frequency will potentially destroy this protective fringe and expose the wetland edges to desiccation. But the fire frequency had clearly been beneficial and the proteaceous shrub fringe at Uloola is in great shape.

Visit a swamp

If you are interested in visiting examples of upland swamps you should be aware they can be among the least accessible ecological communities in Sydney bushland, largely because of their dense shrub fringes. There is a substantial swamp just upstream from the Salvation Creek bridge on West Head Road in Ku-ring-gai Chase and this is possibly the nearest large example to STEP home territory. You can glimpse it from the road – a large swathe of dense saw sedge (*Gahnia sieberiana*) with scattered swamp banksias – but it is a challenge to get anywhere near it. Though there is a small car park there, and you can view the crystal-clear water flowing out of it into the pool below the bridge and appreciate the way swamps function a bit like kidneys on the capillaries and arteries of the drainage systems.

Uloola Swamp in the Royal is reasonably easy to get to, but shuffling in through the thick shrub fringe in summer is a nervy experience because it is great black snake and tiger snake habitat. Probably the easiest, and in some ways the most rewarding, is the swamp adjoining the Mount Bass Firetrail (which turns off about 3 km down the Bundeena road in Royal National Park). The wetland lies in a shallow, open valley fringed by richly-flowering, moist heathland, and

it puts on a spectacular floral display of pink swamp heath (*Sprengelia incarnata*) from late July to late August. Because of the open "moorland" setting you can clearly see the way it nestles into a shallow, hanging valley near the headwaters of its sandstone catchment. And if you view it in *Google Earth* or look at it on a contour map, you can see how its out flowing stream descends from the old land surface into deeply rejuvenated Saddle Gully, plunges over Anice Falls and tumbles into the drowned inlet of South West Arm, Port Hacking.



You can also ponder on how many upland swamps must have been lost across our own local area by urbanisation of the ridges, plateaus and watersheds – it's small wonder that our local creeks are in such poor condition.

Working for a better Environment: A Farming View

Article by Lorna Tomkinson, who breeds Wagyu cattle on a farm in the Barrington area of New South Wales. She writes about new methods she has adopted to improve soil fertility and productivity, and their possible use as future carbon sinks.

From a city perspective the amusing cliché is that Australia's farmers are always whinging, too wet, too dry, the locust plague and so on. Less amusing is the view that they make their living at the expense of the environment – using unsustainable farming practices.

Ten years ago I moved from being an urban based business owner and became a small farm owner. In that time I have come to understand some of the Australian farmer's situation. Being so dependent on fickle weather patterns can be difficult and stressful. You can do the right research, preparation, marketing, use the best farming methods and it may not

work out because of the weather. At times it does seem as if there is only ever too much or too little rain - and it's always at the wrong time of year.

Perhaps we do whinge a bit. However the vast majority of farmers care deeply for the land they live and work on and seek only to improve the condition of their farms both environmentally and economically. As the saying goes: "No environment – no economy." Nowhere is this clearer than on a farm. For grazing farms like ours these improvements focus on creating better ground cover and soil quality.

When we bought our small sixty-six acre property, we were told it could carry one animal for each four to five acres of land – about 15 head in total. Today the property runs thirty-eight head, made up of cows, calves, yearlings and bulls. The major 'improvement' we have made is changing the style of grazing management to cell grazing.

Cell grazing attempts to mimic the effects of herd animals on wild pastures. It has a large number of cattle in a small area for a short time (one day in most instances) then allows the area plenty of time for the plants to regrow ensuring there is always fresh pasture available for the stock. The area does not get re-grazed for approximately 90 days. In their short tenure the cattle eat the plants that they like, the ones that provide the best nutrition. These quickly re-grow, however, the plants that they do not like do not get eaten and eventually die from 'over resting' or being trampled. Additionally, because the area is not over grazed, ground cover remains constant and the soil doesn't get exposed.

Better ground cover means more moisture gets held in the soil to allow good growth in spring. So you get better growth of grass and other edible plant species. Better ground cover also helps retain top soil by reducing erosion. Cell grazing also ensures that the animals do not get a worm infestation. The small brown stomach worm requires the cattle as hosts to complete its life cycle. With the animals not returning to the same area to eat for approximately 90 days they become 'clean' and healthier.

Cell grazing can also help increase carbon sequestration in the soil. According to Tony Lovell of Soil Carbon Australia and Bruce Ward from Holistic Results, who spoke recently in Manchester, UK participating in the Guardian Newspaper's *Manchester Report*. "Planting forests as carbon sinks is a familiar idea. Less discussed – but potentially even more significant – is the possibility of locking vast quantities of carbon into the soils of the world's dry grasslands."

When a herd grazes an area, the grasses get

shortened and shed parts of their carbon-rich roots into the soils. But the herd quickly moves on, giving the grass a chance to grow back, pulling CO₂ from the air. The result is a giant biological pump that takes carbon from the atmosphere and moves it safely to the soils, where it adds to productivity and supports biodiversity. Even when the methane and nitrous oxide emissions of the cattle are taken into account, this "regenerative grassland management" holds the potential to significantly reduce the amount of greenhouse gas in the air says Tony.

On our farm organic carbon in the soil has been independently tested and found to have increased 150% in the last decade. Every day our cattle are helping to take CO₂ out of the atmosphere as they eat the grass. A higher level of organic carbon also means better plant growth – richer pastures. To increase these effects cell grazing could be used to replace the traditional 'set stocking' method when grazing animals for meat production. A set stocked paddock has animals in residence 'until everything is eaten'. Frequently this leads to the exposure of bare ground that allows pioneer plants that cattle do not eat [like thistle and fireweed] to invade the ecosystem out competing valuable food sources.

The exposed paddock is also less able to retain moisture and top soil making it more vulnerable to drought and flood damage as well as the pest plants. The fence line photo below, taken mid-winter July 2009, shows [on the left side of the fence] very short grass from a set stocked paddock and [on the right hand side of the fence] a neat strip of short grass where the set stocked animals get their heads through the fence and then, the longer grass waiting for the cell grazed animals to eat it. The cover is much more complete and carries more food value – even in the middle of winter – with cell-style management.

The set stock method is not so labour intensive and may have applications in some circumstances. For the long term health of the land and the stock that we eventually eat, a cell grazing system is preferable.



Nothing on the land is as simple as it seems and there is still a lot I have to learn. Ten years ago we knew almost nothing when we left Sydney for Barrington. Now we know something, but nowhere near enough. As more and more farmers are turning to sustainable grazing and other, similar, no-till farming methods both quantities of top soil and levels of organic carbon are being increased on the land leading to a cleaner greener future for Australian agriculture.

This in turn ensures a secure food production process that we all rely on and can be proud of.

Working for a better Environment: a City View

Article by Matt Heffernan, a new style of urban farmer and citizen. Matt and his family, living on a typical Sydney plot of land, has developed a high level of self sufficiency in most of life's essentials.

As long as I can remember, I have been interested and concerned about human impact on the environment. I remember writing the same essay three times for my HSC. The one about third world countries, poverty, population pressures and pollution. Geography was my favourite subject because it was about real stuff; the water cycle, river flows, the weather, human land use and associated problems.

Fast forward 15 years. Now married with two boys. We purchased our first home in Oatley where I grew up. I always wanted a veggie patch and now I had some dirt to call my own. Little did I know this was the beginning of a life transformation towards self sufficiency.

Our house was built in the mid 50's. Double brick, very solid two bedroom home on a 455sqm block. The orientation was all wrong. The fibro garage was situated in the sunniest northern part of the yard. We knew some day we would need to make some changes.

A friend gave me a book on Permaculture: "The Designers Manual" by Bill Mollison. I thought this book might help me with my vegetable growing skills. I didn't realise that Permaculture was more than that. The original Permaculture concept was to create a sustainable agricultural system based on perennial and tree crops that had the complexity and resilience of natural ecosystems.

Bill Mollison and co-founder David Holmgren realised that a true sustainable agricultural system cannot exist without a sustainable culture. PERMANent CULTURE. Any culture to a large extent is defined by the food produced within that region. So it is that food plays a major role in sustainability issues. We can't work on an empty stomach.

In 2005 I completed a Permaculture Design Certificate (PDC). The same year my wife and I designed the much needed renovation ourselves using some old plans of the house and what I had researched, in particular Permaculture. It provided guiding ethics and principles as well as design techniques for inside and outside the house. We had also spent six years living in the house discussing ideas and had a draftsman draw them up for \$700, avoiding architects and saving thousands. Building a pool was my wife's one and only real wish. This has had impacts on energy consumption but has definitely provided a very enjoyable local amenity. We love to stay at home for our summer holidays.

Power: We connected to gas for cooking & heating, installed 1kw photovoltaic solar panels with grid connection and solar hot water on the northern pitch of the roof. Hot water is responsible for 40% of household energy and should be a priority for household energy reduction. Lighting is basic, using fluorescent types and no halogen. There is plenty of natural light all day throughout the home with two strategic skylights. Our energy bills sit around 8 kW hours per day. Before the pool it was around 20 - 30% less on average.

Water : We installed 2 rainwater tanks (7000 litres in total) and had the largest connected to the house for all domestic use. A 2500 litre standalone sits at the highest point and gravity feeds the vegetable garden, overflowing to the next tank. To make the water safe to drink, we used large "first flushes" on all down pipes and tanks, sediment and carbon filtration and a stocking full of crushed shells submerged in the tank to bring the pH up and also assist with lead issues. Two comprehensive water tests since have come back perfectly potable.

We rarely need Sydney water except of course for sewerage connection. The composting toilet is a tempting future project. On average we have used 20 litres of Sydney water per day for the last three years, about 1% of the total bill! All appliances have a 3 to 4 A rating.

We have a greywater diversion system which pumps our laundry and shower water to fruit trees using sub-surface irrigation and we use garden safe washing products only. Having a shower is the easiest way to water the thirsty bananas.

Other features included high performance casement windows for cross ventilation, insulation to walls and roof as well as sarking, eco paints for all interior walls, natural oil for floorboards.

Construction : The garage was moved to the southern end (old bedroom), 3 bedrooms and bathroom were built upstairs. Our block unfortunately was too small to remain at ground level. The living area was moved to the north. The original northern side was bricked in and was replaced with large glass doors allowing winter sun to penetrate from 7.30am to 4pm - priceless and cosy. We kept almost all the existing foundations and floorboards downstairs to reduce waste. Our green footprint actually increased as did the house size. I was very lucky to salvage plenty of old hardwood from a demolition down the road. This provided all the bearers and joists for our entertaining

deck. The wood was so hard it needed to be drilled before nailing. 60 year old high quality wood gets another 60 years life instead of going to landfill which was where it was headed.

The Garden: And then there was the best bit - the garden. The builders left all sorts of sludge, broken glass, fibro and 100's of cigarette butts that I am still finding. For the next three years I collected tonnes of local organic waste from neighbours green bins, fruit shops, coffee shops and lawn mowing contractors. With this I made compost pile after compost pile, one next to the other in the garden beds where it was left to decompose. This collection continues today, but to a lesser extent. I have my compost bays in the front yard where the organic matter can easily be dropped off.

The garden beds are made from the sandstone collected during the renovation, and circular patterns were used in their design to maximise reachable garden space. No concreting to allow ongoing small changes.

Building the organic content and humus levels have been a lengthy process. I stubbornly refused to buy fill or soil from suppliers but the effort has been well worth it. My soil now is very healthy. Ongoing fertiliser is provided by worm farms and there are worm tunnels in the garden beds to directly feed the vegetables.

And now my latest addition, two chickens. They are amazing creatures and turn unwanted plants (weeds) into eggs and more fertiliser. The council green bin makes a great huge weed brew bucket fantastic for fertiliser. In goes comfrey, dandelion, thistles, nasturtiums and kelp occasionally when I have been visiting the beach. This, together with worm wee, provides a complete foliar fertiliser. The compost provides the bulk.

I have planted over 40 fruit trees; many dwarf varieties and making good use of the median strip. Help yourself. Established three year old asparagus which will provide me plenty of spears for almost 6 months of the year, for the next twenty years. Effortless food. I have vegetables growing in the front yard and backyard providing almost all of our vegetables. All we have purchased by way of vegetables for many months is onion, garlic and ginger. We grow a huge variety of herbs, mostly being perennial. We eat by the seasons to a much greater extent and this year, to improve my supplies, I have about 50 garlic plants thriving. I also have my own seed bank of many heirloom varieties. It seems strange because I feel like a novice gardener, starting my first little patch 9 years ago. I know little about ornamentals.

In the quest to provide ALL of our fruit and vegetable needs, the fruit part, and two young

hungry boys are my biggest challenge. However, the trees are very young and the volume of fruit that can be obtained from well managed mature trees is phenomenal. I hope to reach my goal in two years. Of course we still need our grains, milk, fish etc but most is bought in bulk every three months through a certified organic wholesaler. I purchase only Australian organic products, to assist the farmers who are building soil, not losing it.

Permaculture has reconnected me to the earth. I feel empowered by the common sense design ideas that seem to have slipped through the generational cracks. I am amazed at the nutritional value of common weeds for human consumption and I love to urban forage (pick of the month - loquat with mulberries coming soon). I find it strange that many of these trees are ignored. I share produce with neighbours, particularly the Greek ones and am now doing my own preserves.

I have also been involved in setting up Permaculture Sydney South, in line with the highly successful Permaculture North. My local St George group has around 40 regular participants and next week we are having an official launch of Permaculture Sydney South, which incorporates three other local groups in southern Sydney.

I look at unused space differently. So much untapped potential. I believe councils should plant nature strips and parks with many appropriate fruit and nut trees, not just natives. We all know that re localising food is important and we dominate the urban landscape. I also believe at home, our journey towards sustainability should start at the soil by the back door s.t.e.p.

Matt Heffernan goes bananas





Notice: Public Meeting on Shooters' Bill

Tuesday 25 August 2009 -
 6.45pm (for 7.00pm start) -
 Ku-ring-gai Town Hall -
 1186 Pacific Highway -
 Pymble.

Speakers include:
 Prof Tony Peacock,
 Laurie Levy, Robert Brown,
 Lee Rhiannon, Catherine
 Cusack,
 Cate Faehrmann



Cartoons. Upper: anon. Lower: NCC

Cats: What are the Facts?

Writing articles about cats can sometimes lead to emotional and heated reactions from both cat lovers and others, as readers of the Hornsby Advocate can attest. Nevertheless the issues arising from cat ownership are important for the natural environment, according to the Cat Protection Society. So what are the facts about cat ownership in Australia?

A Factsheet issued by the Cat Protection Society, "Cats Living Indoors", points out that increasingly people are choosing to keep their cats indoors at all times, because they realise that "there are benefits not just for cats and themselves, but also for the environment". They point out that there are many hazards for cats who are allowed to roam outdoors, including traffic, disease, parasites, other animals such as dogs and many common garden and industrial poisons.

As a result, the average age of an indoor cat is 16 years, while the average age of an outdoor cat may be as little as 3 years! The Society also recognises the harm that outdoor cats can do to others, warning especially that "....your cat can harm precious native birds and animals". The Society provides more information at www.catprotection.org.au

The New South Wales State Government publication "Cats and Wildlife" estimates that there are around twelve million feral cats alone in Australia, making them one of the most successful introduced animals. Feral cats mostly originated as domestic cats that were dumped by owners who no longer wanted them. They have adapted to most environments found in Australia, from deserts to forests to alpine regions. They are prolific; in a single year it is not uncommon for a single female cat of breeding age to have three litters with an average of five kittens in each litter.

The NSW publication quotes research that shows that "...both feral and domestic cats can kill and eat more than 100 native Australian species of birds, 50 mammal and marsupial species, 50 reptile species, and numerous frogs and invertebrate species. In Australia, cats have no natural predators". They point out that even well fed domestic cats will prey on and kill native wildlife because of their natural hunting instincts. They estimate that domestic cats kill, on average, about 30 native animals each per year.

The Victorian Government publication "Protect your Cat Protect your Wildlife" is designated as a guide for cat owners to help them conserve

native wildlife. It estimates that there is on average one cat for every household, with on average about 45,000 of these ending up in animal shelters every year. Of these, less than one percent are reclaimed by owners. They indicate further that feral cats are far more destructive than domestic cats, estimating that they eat the equivalent of seven native bush rats each per week, a staggering 100 million creatures each year.

Both Warringah Council and Willoughby City Council have published pamphlets recognising the benefits that cats can bring to animal lovers, but indicating that cat ownership carries with it responsibilities that have to be observed. These include:

- Desexing cats to avoid unwanted kittens
- Micro chipping all cats, which is compulsory in New South Wales
- Keeping cats indoors, particularly at night
- Putting a collar and two bells on all cats to alert wildlife, particularly if they are free to roam in daylight hours
- Never feeding stray cats, who are often diseased
- Never dumping a cat. If you are unable to find another home for it, contact the Cat Protection Society
- Never allowing a cat to bite or scratch. Cats can carry diseases which affect humans, especially toxoplasmosis which can cause birth defects and miscarriages, as well as blindness in young children as well as adults,
- Providing a cat free sanctuary in your garden for birds, lizards and other wildlife to use with safety
- Educating your children and neighbours in how to look after both their cats and the local native wildlife.

All parties seem to be in agreement that the ideal is to have healthy cats as well as healthy wildlife. They also agree that responsible cat ownership is the key to achieving both.

STEP Membership Fees Now Due

STEP members are reminded - a sad fact of life but true - it is that time of the year again! Fees for the 2009 -2010 financial year are now due. If you are liable this year (many members have three year subscriptions) our Secretary will let you know. There are of course big savings if three year renewals are taken out. Our Secretary and Treasurer will thank you.

Membership		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 (cost to non-members is \$50)		\$40		
A Field Guide to the Bushland of the Upper Lane Cove Valley		SOLD OUT, but being revised		
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				

Special Christmas Gift Offer: Sydney's Natural World

"What makes Sydney's natural world so unique? The answer surely lies in the interplay of shapes, textures and colours. Photography is a medium that can highlight these and offer the reader a chance to identify and understand not just familiar features but some unusual ones as well." John Martyn.

STEP has made those difficult Christmas gift decisions a whole lot easier by reducing by \$10 the price of this iconic publication by Dr John Martyn for the forthcoming Christmas season. There are no other books that deal with the natural assets of the Greater Sydney region as well or as completely. *Sydney's Natural World* makes a wonderful gift for anyone interested in Sydney or in urban bushland or for anyone from overseas. It is a great way of showing people just what we have in the Sydney area apart from the Opera House and other built attractions.



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