



# STEP Matters

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## Diary Dates

7 March	Clean Up Australia Day
23 March	Talk about Blue Gum High Forest
28 March	Walk in Blue Gum High Forest

## Australia Day Honours

Veteran STEP member, Margaret Tuckson, who is well known within STEP as a strong supporter of environmental consciousness and the need for conservation of bushland for future generations, is also a veteran in the visual arts community. In this context she has been honoured with Membership (AM) of the Order of Australia in the General Division.

Margaret is an expert in traditional Papua New Guinea pottery, and she was honoured for her promotion of ceramics and expressionistic art. As an artist herself, Margaret has promoted this medium for many years. She has also dedicated much of her time to cataloguing the body of work left by her late husband, Tony Tuckson. Tony was among Australia's most prominent abstract artists, leaving a legacy which Margaret is determined to conserve.

Margaret, we salute you!



## Clean Up Australia Day

Sunday 7 March 2004

STEP will **not** be running an official site this year. However there are official sites at:

- Canoon Road Netball Courts
- Thornleigh Oval
- Blue Hole, Lane Cove National Park, West Killara

The most convenient for most people will probably be Canoon Road and we have advised the co-ordinator that STEP members will be registering there between 9 and 11 am. You should register for occupational health and safety reasons and so that they can maintain statistics on volunteer numbers. You will need to collect and return rubbish bags to an official site for disposal.

Be sure to wear strong shoes and long pants, bring gloves, a mobile phone if you have one, and wear appropriate sun protection.

## Blue Gum High Forest, St Ives Talk

Date: Tuesday 23 March  
Time: 7.45 pm  
Place: St Andrews Church Hall (Vernon Street, South Turramurra)

### Walk

Date: Sunday 28 March  
Time: 2.30 to 4pm  
Place: Rosedale Road, St Ives

Contacts for both activities are Nancy Pallin (9416 7334) and Neroli Lock (9489 5794).

## STEP Inc

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

### Cultural Heritage

The Blue Gum High Forest at St Ives was visited by Captain Arthur Phillip in 1788 and botanist George Caley in 1805. It is the largest, most viable example of the magnificent forest which was felled to build early Sydney. The timber was sawn and taken by barge down the Lane Cove River from Fiddens Wharf.

### Endangered Ecological Community

An ecological community is an assemblage of native species (plants, animals and micro-organisms) occupying a particular area (definition in NSW Biodiversity Strategy 1999).

An **endangered** ecological community is an assemblage of native species that is likely to become extinct if threats continue (*NSW Threatened Species Conservation Act 1995*).

On 5 September 1997, the Blue Gum High Forest listed by the NSW Scientific Committee, was gazetted as an **endangered** ecological community. Fragmentation, developments, increased nutrient status, inappropriate fire regimes, invasion by exotic plants, mowing and clearing pose major threats to the survival of the community.

### Description

Blue Gum High Forest only occurs in the Sydney Basin bio-region, only on soils derived from Wianamatta Shale, and is restricted to high rainfall ridgelines which receive more than 1100 mm rain per year.

It has the structural form predominantly of tall open-forest to open forest. Originally it was composed of large trees, in some places over 40 m in height. Its canopy trees are Sydney Blue Gum (*Eucalyptus saligna*) and Blackbutt (*E. pilularis*), with Sydney Blue Gum particularly abundant on the lower slopes and depressions and Blackbutt more prevalent on the ridges.

Other tree species are Smooth-barked Angophora (*A. costata*), Grey Ironbark (*E. paniculata*), White Stringybark (*E. globoidea*), Turpentine (*Syncarpia glomulifera*) and Forest Oak (*Allocasuarina torulosa*) (D. Benson and J. Howell 1990 *Taken for Granted: The Bushland of Sydney and its Suburbs* Kangaroo Press, Kenthurst).

Less than 5% of the original Blue Gum High Forest exists today, in the form of a number of remnants (see map below).

### St Ives Remnant

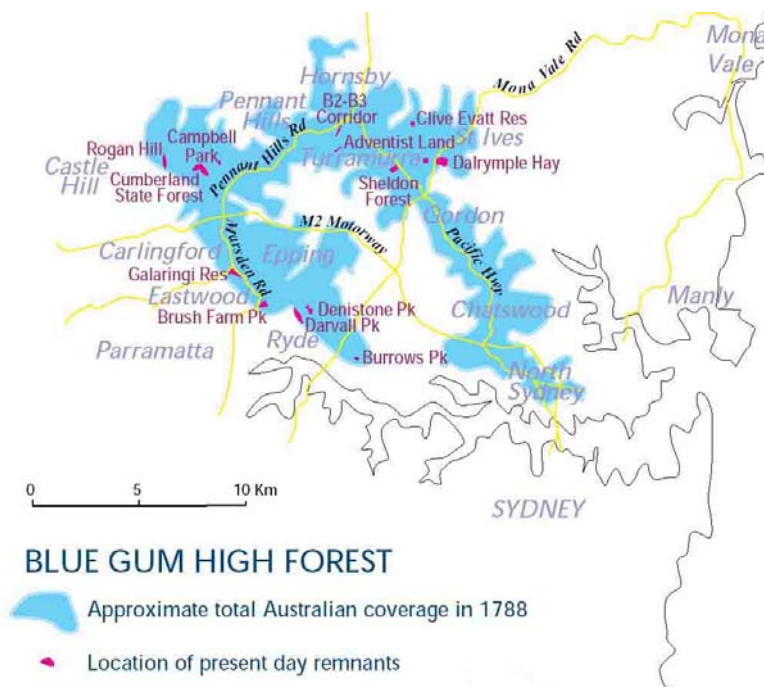
The Blue Gum High Forest in St Ives has a complex understorey of shrubs, herbs, vines, grasses and ferns, and provides habitat for 79 species of native birds (list provided by Reg Clark, a member of Birding NSW and the NSW Bird Atlassers Inc).

Nomadic nectar-feeding species visit the forest when the Blue Gums, Blackbutts, Ironbarks, Turpentines and Angophoras are in flower. The honeyeaters and the grey-headed flying-fox, now listed as a vulnerable species, feed on the nectar and in return, spread pollen from tree to tree, a process which enables the trees to produce viable seeds.

It has been well established that larger areas of bushland have a better chance of survival than smaller remnants.

The Blue Gum High Forest in St Ives is the largest, most viable remnant of Blue Gum High Forest in existence. It consists of:

- Dalrymple-Hay Nature Reserve (National Parks estate, 11 ha)
- Browns Forest (Ku-ring-gai Council, 5 ha)
- Water Reservoir (Sydney Water, 1.5 ha)
- 100–102 Rosedale Road (privately owned, 1 ha)



The viability of the Blue Gum High Forest in St Ives is currently threatened if development occurs on the privately owned 1 ha site. It is essential that this land is brought into public ownership through purchase.

### **Blue Gum High Forest Group**

Recently the Blue Gum High Forest Group was formed to try to preserve this endangered ecological community for all time.

The group consists of representatives of some member groups of the NSW Nature Conservation Council of NSW (STEP Inc, Australian Plants Society (North Shore Group), Ku-ring-gai Bat Conservation Society Inc), and other organisations including Friends of Lane Cove National Park and the Ku-ring-gai Historical Society. Ku-ring-gai Council and councillors are also lending their support to publicise this issue.

### **Walks and Talks**

In the coming months the Blue Gum High Forest Group will be running an education and information campaign to raise awareness in the community and to obtain pledges of donations to support public acquisition of the parcel of land at 100–102 Rosedale Road to prevent its development from threatening the integrity and survival of the rest of the Blue Gum High Forest remnant.

They will also be organising a series of guided walks through Dalrymple-Hay Nature Reserve and Browns Forest to allow people to see at first hand what's at stake.

STEP will host a talk on Tuesday 23 March and the first walk will be on Sunday 28 March (see page 1).

For more information check out [www.step.org.au/bghf.html](http://www.step.org.au/bghf.html).

### **Renewable Energy: A Misleading Notion**

Frank Fisher, Associate Professor and Director, Graduate School of Environmental Science, Monash University

At the rate industrialised peoples have grown used to using energy, no energy form can be used, and no energy transformation to electricity can occur, without environmental problems. On the whole all societies are profoundly ignorant of energy as engineers understand it and even less aware of energy as ecologists understand it. Hence the title of this article and the impetus behind it.

I should say at the outset that as the instigator of a large (75 MW)<sup>1</sup> inland wind energy project in Victoria, I can hardly be said to be opposed to the use of renewable energies. Nevertheless, I am seriously concerned with the cavalier approach to renewable energies apparent in even our most responsible media.

The very idea of renewables fosters the illusion that our present ignorant ways with energy can continue. The more viable renewables become and the more they are able to compete with fossil fuels — most of whose costs are simply ignored — the more they suppress energy conservation.

Energy conservation is our cheapest and most socially and environmentally benign energy source and should be reflected in both our economic and regulatory structures.

Renewables, not conservation, are sold as a panacea. Renewables are marketed on the basis that they will permit us to continue to live in the way we have grown accustomed but with 'zero emissions'. This is a mischievous and dangerous illusion.

On average each Australian demands some 2 kW (three horsepower!) of electricity generating capacity and much more than that from our other energy systems (heating, transport etc). Most of these systems are based on fossil fuels, which are of course not renewable and place a tremendous burden on our environment in transformation to electricity.

Large-scale renewable systems involve mining sunshine via plants and the heat and movement the sun gives to the atmosphere and the oceans; hence hydro and wind power. Attempting to fill the current demand with renewables creates a raft of environmental, social and even moral concerns. Energy cropping for electricity and automotive fuels is a good example.

Energy cropping means growing fuels and burning them directly to generate electricity, distilling alcohol from sugar cane or squeezing oils from other plant materials and then burning these liquids in internal combustion engines to drive vehicles, or again in boilers to generate electricity.

In the case of electricity it means wasting 60 to 80% of the crop because burning it to generate electricity is at best only 40% efficient. As auto fuel however, it means wasting 99% plus because most of it then goes to drive the car and not the motorist. Only 20% of this is turned into motion by the car's engine then 90% plus of that is used to push the car which is at least ten times heavier than its driver-passenger.

Beside all the environmental damage implied here, there is a real case to ask whether it is moral to use potential food-bearing cropland that wastefully?

For all their relative benignancy, solar energies mined through hydroelectric plants (solar energy lifts the water), wind generators and natural draft towers such as the 1 km high towers proposed for Mildura, generate a broad range of ecological implications.

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<sup>1</sup> About 1% of Victoria's total installed electricity generating capacity, although developments indicate that this will be reduced for reasons associated with fragility of the local grid.

Consider the implications of the Snowy Mountains hydroelectric installations for the Snowy River and for the social and ecological systems that lived along and in it. If all humans were to demand the same 2 kW from the wind say, as we in Australia currently expect from fossil fuels (coal, oil and gas), the energy regime of the atmosphere will change as surely as through burning fossil fuels.

It also needs to be said that solar cell electricity or photovoltaics is not an answer to the kind of bulk electricity demands we have today. Even here in Australia that's the case because the quantities available per square metre per day are small, especially after deducting the energy costs of making and installing them.

In addition to ecological effects, all energy infrastructure costs energy to create, transport, install, maintain, dismantle when its life is done and to defend. If more kilowatt hours of energy are used to set up, maintain, dismantle and repair an energy installation than it actually delivers, one can be excused for asking questions about it.

That is almost certainly the case with nuclear power and therefore the sanity of its use has to be questioned even before we concern ourselves with issues of radiation and the potential of nuclear terrorism. The reason that this general view is not taken is, again, that virtually no one sees it. Moreover, we have not yet created the necessarily international structures that would enable us to act upon it.<sup>2</sup>

Wind generators and natural draft towers will unequivocally deliver more electricity than their energy costs. However, they are patently not zero emission generators. Even in service, they suck energy from meteorological and ecological processes with various, as yet largely unknown, effects. In construction,

monitoring, maintaining and dismantling, they have the usual multifarious energy and ecological implications.

There simply are no such things as energy and environmental cost-free energy forms. Even conservation requires its techniques to be set in place, monitored, maintained and ultimately, dismantled.

Driver-only automotive commuting is a category of energy use so wasteful that it deserves special mention. It is in a class of inefficiency all its own. The transport energy system pays a 10,000% plus premium for moving each of us. While virtually all of us are engaged in this activity, the scale of inefficiency is such that one is surely entitled to ask whether it is reasonable, let alone moral, to throw 100 units of renewable energy at an urban commuter, to get just one unit of kinetic energy? This is a task that a bicycle coupled with trains could do faster, more healthily and more ecologically sustainably for a tiny fraction of the energy cost.

Issues such as these however, simply do not figure on the public's radar because there are no publicly recognised energy indicators, let alone efficiency indicators. This is not to say that there are no indicators, only that they are not publicly recognised. Few of us actually read our electricity bills, let alone graph the efficiency of our cars. Most of us would not know where to start. Perhaps an energy efficiency meter could be given prominence as a new dashboard indicator. The problem would be working out with manufacturers what to include in the calculation.

The price of energy is too low, joules and kWh are still too obscure as measures, and most of the really large scale pollutants associated with energy transformations such as water, carbon dioxide and heat are all invisible and, in any case, seem not even to be pollutants. The ecological costs such as the irretrievable destruction of

habitats and species extinctions are even less visible.

It is theoretically possible to calculate the energies that would have to be found to make good some of this damage (e.g. the amount of excess carbon dioxide that would be needed to be withdrawn from the atmosphere and sequestered safely). Deep geological sequestration has been proposed by the Victorian Government. If we were to add these energy-for-ecological-repair costs to the other energy costs of our renewables, let alone of our fossil fuels, few of our current energy sources would make much sense; that is, few would qualify as sources!

With all this in mind, our richest energy lode is unequivocally conservation techniques. So, change that favours the economics and fun associated with conservation and with reuse/recycling generally can be combined with the advent of economic and other incentives that favour low energy productions and pursuits such as in health, sport, communication, the arts, the knowledge industries and so on.

A conservation focus means that while definitely the way to go for new electricity generation, renewables should not be permitted to eclipse conservation. Many of these activities can be pursued by individuals with no help from government but government does have two important roles. The first is to reverse the many perverse incentives that continue to make nonsense of so many energy conserving activities. The second is to educate the whole community about energy matters not just enhanced greenhouse effects. The effects could be both transformative socially as well as ecologically.

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<sup>2</sup> See Needed: A New Way of Thinking *Eureka Street* (2000) 8(7), 25–27, and letters to *Eureka Street* (2001) 9(3),9 and 9(5),12.