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STEP MATTERS – EMAIL OPTION NOW AVAILABLE

Postage costs went up again on 1 January (newsletter postage is now \$1). The cost for printing and posting just one issue or our newsletter will rise from about \$500 to \$600 (or from \$2500 to \$3000 for the five issues we post to you each year). As you see, postage costs are a significant expense and so the time has come to bite the bullet and start emailing our newsletter and membership renewal notices.

We will send you an email with a PDF of the newsletter as well as links to the articles so you will have the option of reading selected articles online. Another advantage of the electronic options is that you will be able to view the photographs in colour.

We know many of you prefer a hard copy so, at least for the time being, we will still provide that option.

If you would like to receive your newsletter by email, please email secretary@step.org.au.

STEP EVENTS

18 February, Talk Wahroonga Waterways Landcare

Date: Thursday 18 February
Time: 8 pm
Venue: St Andrews Uniting Church,
Chisholm Street, Turramurra

Graham Wegener, Project Coordinator at Wahroonga Waterways Landcare will talk about their work caring for the bushland at the Wahroonga Estate. They also manage a number of education and community engagement programs.



The Wahroonga Estate is an area of 31.4 ha located behind the Sydney Adventist Hospital, at the headwaters of the Lane Cove River. The Landcare work is an important contributor to the health of the river.

Note: This talk is on a Thursday. We are trying to avoid council meetings.

25 February, Walk Wahroonga Estate

Date: Thursday 25 February
Time: 9 am
Length: 2 to 2.5 hours
Grade: medium
Meet: Adventist Aged Care car park, corner Waratah Way and Mount Pleasant Avenue, Wahroonga
Bring: water, sturdy walking shoes, hat, sunscreen and insect repellent
Contact: Jill Green (9489 8256, jillpgreen@gmail.com)

STEP and staff from Wahroonga Estate Landcare will lead a walk highlighting the ecological features of this environmental jewel that includes several vegetation communities along Coups Creek. The progress of the extensive bushland restoration projects will be demonstrated.

STEP Inc

Community-based Environmental Conservation since 1978

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6 March, Clean Up Australia Day

It is on again. STEP will run a site in the usual location near Thornleigh oval focusing on rubbish near Lane Cove National Park and the Comenarra Parkway.

The site will operate from 8.30 am to 1 pm. The registration table will be near the Thornleigh oval entrance. All volunteers are welcome. You may just turn up on the day or register at www.cleanupaustraliaday.org.au/Thornleigh+Oval.

Please bring walking shoes, hat, water and sunscreen. Gloves and bags are provided.

13 March, Walk Agnes Banks Nature Reserve

Date: Sunday 13 March
Time: 9.45 for 10 am start
Length: 3.5 km (3 to 4 hours)
Grade: easy to moderate
Meet: Entrance in Rickards Road off Castlereagh Road (8 km SW of Richmond and 4 km SW of Agnes Banks village)

Bring: Plant ID book, camera, sunnies, sunscreen and hat – it's thickly vegetated but not particularly shady, light lunch or snack and drink

Contact: John Martyn (0425 830 260 or johnmartyn@optusnet.com.au)

Agnes Banks Nature Reserve is unique in the Sydney area and a wonderful place for wildflowers in both spring and autumn. It's unique because it consists largely of white dune sand, even though it's 60 km from the coast!

Not only does it have dune sand but some coastal plant species too, the conspicuous one being wallum banksia (*Banksia aemula*) which flowers (conveniently for the walk) at this time of the year. This is its only inland location. Among a number other species flowering in March will be the incredibly delicate nodding geebung *Persoonia nutans*, which is listed as endangered. At the bottom end of the reserve there is a distinctly different flora on waterlogged Londonderry Clay.



24 April, Walk Thornleigh

Date: Sunday 24 April
Time: 9 am
Length: approx 4 km, 1.5 to 2 hours
Grade: some step climbing required
Meet: Thornleigh Oval car park

STEP is putting on a walk as part of the Hornsby Healthy Living Festival. For full details go to <http://healthylivingfestival.com.au>.

We will walk to City View Lookout via Lorna Pass through varied forest and views of Lane Cove River.

ISSUES OF MAJOR CONCERN FOR NSW

The population of the Sydney metropolitan area is estimated to grow by 1.6 million people by 2031. According to the NSW Government, Sydney will need 664,000 additional dwellings by 2031. This dramatic expansion is being driven by the Australian Government's insane promotion of high immigration in pursuit of its unsustainable growth agenda.

The NSW Government's response is A Plan for Growing Sydney. The headline of the website says:

A Plan for Growing Sydney will help ensure Sydneysiders have greater access to the things they value – great outdoor spaces, greater housing choice, shorter commutes and world-class job opportunities.

But they are going about it in ways that will destroy our local environment and could leave the community out of consideration of major changes.

Three law changes are covered below.

Biodiversity Laws to be Rewritten

STEP Matters (Issue 183, p4) explained the reasons for concerns about the NSW Government's plans to rewrite the biodiversity laws. The new legislation is due to be released in March 2016 and the indications are that protections will be significantly weakened.

As occurred with the hunting in national parks and the 10/50 vegetation clearing laws, there is a spurious argument behind the changes. Rural landowners have been lobbying the National Party members to unwind the Native Vegetation Act that restricts land clearing. So the Government wants to change the law but they will change it for coastal and urban areas as well.

The major cause for concern is the weakening of the offset provisions. This will allow developments to proceed that might have been refused under the current laws because of impacts on threatened species habitat or endangered ecological communities.

Under the proposals, developers will not be limited to the 'like-for-like' principle where offset areas must be of an equivalent ecological type to the area to be lost and preferably in the local area to be affected. Under the new law it appears likely that developers will be able to substitute entirely different vegetation and also employ so called supplementary measures such as paying into a government fund or rehabilitating mine sites (which should be done by mine owners).

This offsetting will have a particularly destructive effect in urban areas where often there is no like-for-like offset available. Areas like the Cumberland Plain Woodland that is already under tremendous pressure from development will be further threatened.

These changes will be directly opposed to the Australian Government's commitments to preserve biodiversity, increase urban tree cover and reduce greenhouse gas emissions. The Native Vegetation Act, when it was introduced in 2003 was a major factor in the reduction of Australia's emissions from land clearing.

We urge you to write letters and contact your local member to express your concerns by the end of February. The aim is to convince Liberal Party members to override the influence of National Party and remove the destructive elements of the new legislation before it can be approved by Cabinet. We will put contact details on our website.

Expansion of Medium Density Housing

In the past, councils expended significant funds in formulating local environment plans with zoning locations appropriate for different areas. The particular zoning and its extent took into account the immediate and cumulative effects on local infrastructure, services, traffic, street car parking, social services and amenities. The matching development control plans gave consideration to the local character of the area, including streetscape, topography, shared views, and soils.

It now seems that the NSW Government is trying to overwrite these local powers by proposing a major expansion of medium density housing into low density housing areas. Details are provided in a discussion paper released in November 2015 called *Options for Low Rise Medium Density Housing as Complying Development* (http://planspolicies.planning.nsw.gov.au/index.pl?action=view_job&job_id=7407). The deadline for submissions is 15 February but may be delayed.

The NSW Government is rushing in these proposals before the Greater Sydney Commission has even got off the ground. The Commission is intended to be responsible for metropolitan planning controls in a partnership between state and local government. How can it act effectively when such a major change to planning laws is being implemented right now?

The paper is proposing a new route for the delivery of medium density housing using complying development. This is in addition to the existing R3 zone which is specifically designed to deliver medium density housing.

The application of the mechanism of complying development is problematic. Broad geographic application throughout Sydney means none of the local infrastructure and other needs can be properly taken into account. The proposals would also lead to an effective blanket rezoning to medium density, with minor exceptions, of virtually all single dwelling, low density residential R2 land with a street frontage of 12.5 m or more and a minimum lot size of 400 m².

The suite of medium density complying development types cover dual occupancies, manor houses (2 up, 2 down) and townhouses/terraces depending on land size. For example 3 to 10 dwellings could be built in a terrace or townhouse type configuration on land with a minimum size of 600 m².

The proposal to expand the definition of complying development will remove from local residents their rights to functional neighbourhood notification under council-determined development applications. This includes their right to object and have those objections assessed as part of the normal development assessment process. Residents in R2 (low density) zones will suddenly find medium density development happening next door that they thought was not permissible under the existing zoning laws.

These proposals represent abysmal planning. They attempt to provide a 'one size fits all' approval process that cannot possibly take into account the significant variation between, and within, local government areas. The traditional amenity of a single house on a single site will be lost. Once some development of this nature occurs in a street, will all the neighbours want to follow suit? The loss of leafy treescapes will be profound.

Complying medium density should only be considered for sites within 'core' R3 zones, i.e. sites where the R3 zone does not interface a lower density zone.



Would you like this in your street?

Forced Council Amalgamations

After promising that amalgamation would not be forced onto residents, the NSW Government is pressing ahead by moving the goal posts. Initially local councils needed to demonstrate to IPART that they were 'fit for the future'. Then after the majority of councils did prove their financial fitness the Government imposed a minimum scale and capacity (population size) as the requirement.

From STEP's point of view there could be benefits in combining the Bushcare management of Hornsby and Ku-ring-gai, both of which have excellent features. But will there be a cut in overall funding?

Claims of financial advantage have been made in a report prepared by KPMG but there is not sufficient information to check the validity of the claims. The report assumes improvements in administration efficiency but will this come at the expense of reduced services? The area of land to be managed will after all remain the same. Bushland will come under increasing pressure as urban development continues.

The number of councillors covering the total area will reduce from 20 to 15 but the total area of bushland that each of these councillors will responsible for will increase dramatically compared with their current council area. Ku-ring-gai is 84 km² but the Hornsby area proposed to be included is 455 km²!

The claim in respect of the Ku-ring-gai/Hornsby merger proposal is that a gain of \$70 million will be achieved over 20 years! A projection over such a long timeframe is problematic to say the least. The population of the merged council area will be about 270,000, growing to about 330,000 by 2030. The financial benefit equates to very little per capita, about \$10 pa after allowing for inflation.

As the mergers are unlikely to be passed by the Upper House, the Government is using a process in the Local Government Act of altering council boundaries. A 'delegate' has been appointed to review the merger between Ku-ring-gai and Hornsby councils.

Please consider making a submission. The due date is 26 February. Find details on www.councilboundaryreview.nsw.gov.au.

CLIMATE CHANGE IMPLICATIONS FOR LOCAL BUSHLAND

The Ku-ring-gai Bushcare Association is an unincorporated organisation that is supported by Ku-ring-gai Council which supports the Bushcare volunteer program and holds regular educational events. The committee comprises elected volunteers and Council employees.

At their annual general meeting in November 2015, Andrew Little spoke about talks held during the year that highlighted factors that will have major implications for the health of our local bushland in the future and which need to be considered in bushland management practices.

Prof Frankham (Macquarie University) gave a talk on conservation genetics for bush regenerators. He found that with small isolated populations as exist in our fragmented reserves, seed production and seedling viability declined with time due to lack of genetic variability. For small populations it is essential to broaden the genetic base to retain viability and capacity to adapt and evolve to a changing environment. Those people who attended the Native Seed Provenance Workshop at Mt Annan Botanic Gardens in July would have heard the findings of other researchers were similar.

Two talks were presented at the Convenor's Forum by Dr Scott and Dr Hancock. They showed that climate modelling by CSIRO indicated that by 2050 Sydney's climate could be similar to that of Port Macquarie and by 2100 to that of Brisbane. Our small fragmented bushland reserves would be most at risk due to their limited genetic base.

In the longer term one of the real game changers of the 21st century will be climate change. It is clear we will not be able to continue through the century on a business as usual basis. This is summed up in a recent CSIRO report (Dunlop M et al, 2012, *Implications for Policymakers: Climate Change, Biodiversity Conservation and the National Reserve System*. CSIRO Climate Adaptation Flagship, Canberra p6) which states:

Biodiversity will become increasingly dynamic, including changes in species distribution and abundance; changes in ecosystem composition, structure and function; and changes in the land uses and ecosystems making up our landscapes.

Many current conservation mechanisms primarily aim to preserve species and communities in their historical locations. This paradigm of conservation will become increasingly unachievable and less effective for guiding conservation investment and actions.

The challenge before us is to change our mindset, from preserving the vegetation and ecosystems that exist, to promoting their evolutionary capacity to adapt to a changing environment. Going forward, it will be our ability to make these changes that will likely determine our success in managing the natural environment

PARIS CLIMATE CHANGE AGREEMENT

The Paris climate change talks in December 2015 produced an agreement hailed as 'historic, durable and ambitious'. Developed and developing countries alike are required to limit their emissions to achieve an objective of limiting average global temperature increases to 2°C with an aspiration of 1.5°C. There will be regular reviews to ensure these commitments can be improved, if necessary, in line with scientific advice. It is considered that the consequences of increases beyond 2°C such as the costs of adaptation, reduction in food production, risk of extreme events, loss of biodiversity, sea level rise etc will be unacceptable and irreversible.

Finance will be provided to poor nations to help them cut emissions and cope with the effects of extreme weather. Countries affected by climate-related disasters will gain urgent aid.

Like any international compromise, it is not perfect: the agreed caps on emissions are still too loose. Poor countries are also concerned that the money provided to them will not be nearly enough to protect them. Not all of the agreement is legally binding, so future governments of the signatory countries could yet renege on their commitments.

Target Reductions

The commitments for greenhouse gas emission reduction made by nations are called intended nationally determined contributions (INDCs).

Australia's target for 2030 is 26–28% below 2005 level (the prior target was 5% below 2000 level by 2020). However, the Australian Government likes to change the goalposts to suit the message:

- 2005 emissions (612 Mt CO₂eq) were much higher than in 2000 (513 Mt CO₂eq)
- 2030 target is about 18–20% below 2000 level

The Climate Change Authority recommended a reduction of 40–60% on 2000 level.

Target reductions for:

- US is 25–30% on 2005 level by 2025
- UK is 50% on 2000 level by 2030
- China is 60–65% per unit of GDP by 2030

The Intergovernmental Panel on Climate Change has produced a report on the possible effectiveness of the announced INDCs [1]. The report uses the concept of a global emissions budget to do the analysis.

As greenhouse gases persist in the atmosphere for a long time (over 100 years on average) it is cumulative emissions over time (the emissions budget) that have the greatest impact on global warming, with the overall requirement the emissions fall to zero by the end of the century. However the longer the delay before total emissions start to be reduced the more rapid and costly the transition will be.

The total budget for 2011–50 is about 1000 Gt CO₂eq if warming is to be limited to 2°C with a 67% probability [2].

The current annual level is around 50 Gt and the INDCs, if achieved, will lead to a level of about 57 Gt by 2030.

That's right, the trajectory is for increases to continue under the current commitments, mostly in developing countries.

A large proportion of the budget will be used up by 2030, estimated at 54% by 2025 and 75% by 2030. That leaves only 25% of the budget left for the rest of the century.

Much greater efforts will be required after 2030 with greater cost implications unless countries improve their INDCs.

Australia's Current Policies

It is already doubtful that Australia will achieve the emission reduction targets within the current policy framework. Paying polluters to reduce emissions under the Direct Action Plan will simply not be enough. For a start it is not clear what level of reductions will be achieved. The Renewable Energy Target has been set but still has the uncertainty of regular review.

Organisations like ClimateWorks and Beyond Zero have shown that, if the right policy settings are in place, Australia can easily achieve its target and can actually reduce emissions to close to zero by 2050.

ClimateWorks concludes that economic prosperity will not be damaged. Real GDP may grow by 0.1–0.2% less pa than might otherwise be the case [3]. All that is needed is the right political will from the Turnbull Government.

References

- [1] *Synthesis Report on the Aggregate Effect of the Intended Nationally Determined Contributions*. UN Framework Convention on Climate Change, 30 October 2015
- [2] Meinshausen *et al* (2009) Greenhouse-gas emission targets for limiting global warming to 2°C. *Nature* **458**, 1158–1162
- [3] <http://climateworksaustralia.org/project/national-projects/pathways-deep-decarbonisation-2050-how-australia-can-prosper-low-carbon>

HORNSBY QUARRY DIATREME

In November last year STEP held a talk by Dr Ian Percival on the unique volcanic diatreme that has been exposed in the Hornsby Quarry. The Geological Society of Australia and STEP made submissions to the Roads and Maritime Services about the project to use the quarry void to dispose of spoil from the NorthConnex tunnel. STEP is pleased to see acknowledgment of the submissions in the recently published responses. But while it appears that the upper two levels of the quarry will escape burial, so far we have seen little reference in any document to the enormous importance of this site as a scientific and educational tool.

In a modern world where dramatic images of volcanoes and other natural phenomena from remote corners of the globe are just a mouse-click or screen-touch away, to have on our local doorstep the best real-life example of an exposed volcanic neck in Australia is not to be lightly brushed aside.

In the proposed new park complex, STEP would like to have a viewing platform for the general public and for students, with comprehensive information panels on the Hornsby diatreme and diatremes in general. It should also be made possible, with due safety considerations, for guided geoscience student parties and qualified scientists to access and sample the actual faces.



Recent photo of the diatreme
(Margery Street)

Important facts to consider:

- The diatreme complex of Hornsby and Thornleigh is one of the two largest in the Sydney Basin amongst 95 or so known diatremes (the other large diatreme is Nortons Basin near Wallacia).
- The diatremes are believed to be largely Jurassic in age, a time when the water-saturated sandstones, shales and coal

measures of the Sydney Basin were settling and compacting, and magmas came in from beneath and blasted residual water to the surface through powerful, steam-driven vents. Such vents, known as maars, are a worldwide phenomenon but it would be extremely difficult to find a better or more accessible example of one in cross-section than Hornsby's anywhere on the planet.

- The numerous diatremes scattered through the Sydney Basin have had striking effects on topography and vegetation. They carry highly fertile soils and many were cleared for agriculture, but remnant natural vegetation such as Hornsby Valley's blue gum forests are strikingly different to that of surrounding terrain, and almost invariably have led to their classification under threatened ecological community and species acts, both state and federal.
- The igneous event that drove the Hornsby diatreme has provided most of Greater Sydney's road metal aggregate via quarries such as Hornsby and Prospect.

PRICKLY BUT FRIENDLY CLOSE ENCOUNTER

STEP committee member, Andrew Little, happened across an Echidna searching for ants in a driveway in Roseville Chase. It was a concern that he had open shoes without socks at the time and so stood perfectly still. He describes the experience.

As the Echidna wandered past it decided to investigate my leg. It was quite gentle and the tip of its snout felt moist, similar to a dog's, but more leathery. Clearly it had not come across a human leg before as it continued to probe with its snout. However when it finally started to raise a claw to further its investigation I decided it prudent to move aside. It made no attempt to run away, but went into a diminutive huddle.

Unlike most animals it has a fused jaw through which the sticky tongue slides. Also it waddles as its rear toes face backward. Apart from its spines, this must be one of the most innocuous creatures I have come across.



WE CAN ACHIEVE SUSTAINABILITY – BUT NOT WITHOUT LIMITING GROWTH

Dr Mark Diesendorf (Associate Professor, Interdisciplinary Environmental Studies, UNSW). Originally published on *The Conversation* on 30 Nov 2015 (<https://theconversation.com/we-can-achieve-sustainability-but-not-without-limiting-growth-51032>)

Can Australians be sustainable and enjoy endless economic growth? It's not likely.

In a recent article on *The Conversation*, Steve Hatfield-Dodds argued that sustainability was possible in Australia without sacrificing economic growth. He also argued the necessary policy changes would not require fundamental changes to Australians' values. This research was based on a [paper](#) in *Nature* and modelling undertaken for CSIRO's recent National Outlook Report.

Contrary to this pro-growth outlook, I will argue that sustainability would be almost impossible to achieve in practice without ending growth in population and consumption per person.

I'll also argue that the claim that we don't need to change our values cannot be proven (or disproven) by the method used by Hatfield-Dodds and colleagues. Recent experience suggests we may need to change our values.

This debate is important, because the argument that sustainability is compatible with growth is likely to be misused by those who have vested interests in endless economic growth.

Growth and Sustainability are Rarely Compatible

The *Nature* paper upon which Hatfield-Dodds' article is based offers new, valuable, quantitative insights. Unfortunately the qualitative result, that growth and sustainability are compatible, is only true under very restrictive conditions.

This can be seen from considering the well-known identity for environmental impact I , derived by Paul Ehrlich and John Holdren: $I = PAT$, where P is population, A is 'affluence' (which can be measured by GDP per person) and T is technological impact I/GDP . Breaking down impacts into the three factors is useful, because each factor can be addressed with separate policies.

Using this formula we can see that in the special case that technological impact T is zero, environmental impact is zero even if GDP continues to grow. For example, in the energy sector, if all energy generation came from renewable sources and if all renewable energy technologies could be made with renewable energy, then the environmental impact of CO₂ emissions would be zero.

Although it is now technologically possible to transition to an energy sector based entirely on renewable electricity, with zero CO₂ emissions during operation (see here and here too), continuing GDP growth and energy consumption would still expand industries that are not carbon-free.

Hatfield-Dodds and colleagues do not make the extreme assumption of zero technological impact. However it's clear from $I = PAT$ that to continue with economic growth and reduce environmental impact, the technological impact T has to decrease faster than growth in PA which is GDP. To my knowledge, the only successful examples are at a local scale for limited periods of time for the energy sector alone.

In practice, this is extremely difficult under circumstances where vested interests such as the fossil fuel industry are resisting the necessary transition towards clean technologies in the US, Australia and many other countries.

Hence there is no guarantee that environmental policies that allow continuing growth in the global economy and population will be sufficient, or implemented rapidly enough, to be compatible with ecologically sustainable development.

So while sustainability and growth are theoretically compatible in a special case, combining them does not offer a low-risk future. To be safer, we must cease global growth in both population and economic activity per person, *and* transition from polluting, resource-intensive technologies to clean ones.

Can Value Changes be Dismissed?

The second claim is that we won't have to change our values to achieve sustainability. However, the modelling used does not, and cannot, model values directly. Instead the argument appears to be an indirect one based on the unsupported assumption that major extensions to policies that exist only to a modest degree in a few places around the world do not require value changes.

To see how unlikely this is, let's take climate-energy policies as an example. There are very few countries with policies and associated institutions and mechanisms capable of transitioning to a zero carbon energy future: Denmark, Germany, Iceland and Scotland (not yet a country) spring to mind.

But Australia and the UK as a whole are going backwards. A paper by one of Hatfield-Dodds' co-authors, Heinz Schandl, finds little evidence for significant decoupling of economic growth from biophysical growth in Australia, China and Japan over 1970–2005.

On the basis of the current environmental crisis (which goes beyond climate change), it can be argued that the only way these major policy changes could be accepted by governments and implemented would be by much greater pressure on governments and other power-holders from citizens and consumers than exists at present. This pressure is necessary to obtain effective sustainability policies and their implementation.

It seems unlikely that such a necessary, massive growth in the social movement for ecologically sustainable and socially just development could come about without a substantial change in societal values. So, contrary to the article's assumption, effective policies and value changes are not alternatives. Instead it is societal value changes that drive effective policies.

What Needs to Change?

Some of the more difficult value changes, that may be required to attempt to increase environmental protection while economic growth continues, include widespread community support for:

- a carbon price of \$50 per tonne of CO₂
- more generally, environmental tax reform that taxes polluting products severely
- tight mandatory energy efficiency standards for all buildings, appliances and equipment
- major expenditure on railways
- greatly increased densification of cities around public transport routes and nodes (to stop loss of habitat for biodiversity from urban sprawl and to reduce transport energy use)
- plantings over huge areas
- a ban on nitrogenous fertilisers
- a shift to low-meat diets (the opposite of the current trend in rapidly developing countries)
- much greater overseas aid, to assist poor countries to participate in the sustainable development process.

These are all major extensions of policies that exist to limited degree in some places in the world. They require collective action as well as individual, as Hatfield-Dodds acknowledges.

But they are very unlikely to be implemented by governments without a massive change in community values and practices leading to a powerful social change movement.

A really effective response to the climate crisis alone may require very radical policies and institutional changes similar to those used by combatant countries in World War II. Unfortunately governments would not consider, let alone implement, such measures in peacetime without value changes leading to widespread community support.

BEVERAGE CONTAINER DEPOSIT LEGISLATION

The Boomerang Alliance, a coalition of groups led by the Total Environment Centre, has been campaigning for more than ten years for the introduction of a drink container deposit scheme to reduce the appalling level of litter, especially along our waterways and highways.

Back in December 2014, the NSW Government made an announcement in favour of container deposit legislation that seemed to be consistent with the Boomerang Alliance scheme. This is based on payment of a 10 cent deposit in the purchase price of each container and the use of reverse vending machines to return the deposit.

In February 2015 Cabinet decided that a scheme would be implemented in July 2017. The design would be finalised after consultation with the community and industry during 2016.

A discussion paper has now been released and submissions need to be made by 26 February. Yes, another call for submissions please! Go to <http://www.epa.nsw.gov.au/waste/cds-consult.htm> to download the discussion paper and make a submission.

The beverage industry, led by the Australian Food and Grocery Council, has come up with an alternative plan with the trite title from the marketers called Thirst for Good. They are offering \$15 million pa to be spent on such activities as:

- Making trailers available to community groups to arrange container collection days with a full trailer load (holding about 6000 containers) receiving a \$300 donation. *The group has to publicise the collection and organise to deliver the load to the local council. Sounds like an administration nightmare!*
- Pay 100 litter collectors to work along highways, the areas with the greatest litter problem. *There is no detail on regularity of this work. Who will look after their occupational health and safety? Regular programs would be needed to have any impact.*
- Supply some 2000 bins in litter hot spots where bins are not currently located. *The industry would empty these bins, a duplication of work already done by councils.*
- Introduce 100 reverse vending machines in areas with high takeaway food consumption. *The 'reward' for depositing a container would be a chance to win a prize or tickets.*
- Education programs. *These have been tried before but just don't seem to be working.*

The Boomerang Alliance scheme is based on the principle of a financial incentive of the return of a deposit of 10 cents per container. This type of system has proven to be successful in South Australia, Northern Territory and around the world. It complements council-run kerbside recycling where councils receive the returned deposits and can potentially reduce waste charges. Charities can benefit when consumers agree to donate deposit refunds or donate containers to collection centres.

The NSW Government promised to introduce a world-class scheme. It is important that the beverage industry is not allowed to smother the scheme with a heavy lobbying. So it is important that many submissions are sent in favour of the Boomerang Alliance scheme. Remember the deadline is 26 February.

Government Environment Objectives

According to the National Litter Index produced by Keep Australia Beautiful, the NSW litter level is currently around 7 litres per 1000 m². That is appalling! Premier Baird recently announced his priorities. The only environmental priority is to reduce litter by 40% by 2020. The Boomerang Alliance claims that their scheme could almost achieve this goal on its own as the volume of drink containers in litter is over 40%.

When the O'Farrell Government was elected they produced a 2021 Plan for NSW. This included several environmental priorities. These seem to be have been overwhelmed by development plans.

Waste Management Strategies

Governments have been developing strategies to reduce waste for many years. The aim is to reduce natural resource use through reuse of materials such as building demolition waste and recycling. Waste is a major source of greenhouse gas emissions and potential health impacts. Large areas of land are needed for waste processing and landfill.

How are we Going?

The data below comes from the Australian Bureau of Statistics 2013, Waste Account, Australia, Experimental Estimates, Canberra ([www.abs.gov.au/ausstats%5Cabs@.nsf/media_releasesbyCatalogue/58479FBF0D1B7171CA257B16000E1913?Opendocument](http://www.abs.gov.au/ausstats%5Cabs@.nsf/media%5Cmedia_releasesbyCatalogue/58479FBF0D1B7171CA257B16000E1913?Opendocument)).

Waste stream	2002–03	2006–07	2010–11	2021–22 targets (previous 2014 targets)
Municipal solid waste	30%	38%	52%	70% (66%)
Commercial and industrial	34%	44%	57%	70% (63%)
Construction and demolition	64%	67%	75%	80% (76%)
Overall % of waste diverted from landfill	45%	52%	63%	75%

From 1997 to 2012 the population rose by 22%, gross value added (a component of gross domestic product) increased by 64% and waste generation in Australia increased by 145%. So we are not going very well!

The ABS found that the supply of waste management services in 2009–10 was worth just over \$9.5 billion while income made from waste products was worth over \$4.5 billion. Waste is good for the economy, right?

In 2011–12 households generated almost 12.5 million tonnes of waste, nearly half of which was organic waste and nearly a quarter was paper and cardboard. The average Australian household generates around 1.5 tonnes of waste a year. 25.2 million tonnes of waste were recovered domestically, while a slightly smaller amount, 24.9 million tonnes, was sent to landfill.

NSW Picture

Back in 2001 the NSW Government implemented the Waste Avoidance and Resource Recovery Act and set targets for recycling rates by 2014. The strategy was reviewed in 2014 and new targets set for 2021. The table below shows the history of recycling rates and targets.

The table shows significant progress has been made since 2002 in increasing recycling and diversion rates but there was no hope of meeting the targets set for 2014. There is only five years left to make the objective of further significant improvements.

The strategy also aims to reduce overall waste per capita and reduce illegal dumping by 30% in Sydney, Central Coast, Newcastle and Illawarra over 2011–12 levels.

The overall picture is the total amount of waste generated increased from 16.3 million tonnes in 2008–09 to 17.1 million tonnes in 2010–11, an increase of 5.2% compared with population growth of 3.4% over the same period.

HARD TIMES FOR FLYING-FOXES IN SYDNEY

Grey-headed flying-foxes are listed as a threatened species and play a crucial role in the pollination of Eucalyptus trees on the east coast. Unlike many birds that have a small range flying-foxes fly long distances and can enhance species resilience by widening the gene pool. Like the calls made by some people for sharks to be removed from our coasts, it seems that people will not accept that bats are a natural part of our environment. A little inconvenience is deemed to be unacceptable.

Out thanks to the Ku-ring-gai Bat Conservation Society (www.sydneybats.org.au) for permission to publish this article that was originally published in Friends of Bats newsletter in Dec 2015. It is written by Tim Pearson, a wildlife ecologist who is researching flying-fox communication for his PhD at Macquarie University.

It's not a good time to be a flying-fox who calls Sydney home. This year, dispersals have been carried out at the camps in Avalon and Kareela. Dispersal is threatened at Balgowlah. In addition, the Parramatta Park camp is under threat.

To make matters worse, dispersals have been approved (and carried out) at times of the year considered harmful to the animals – contravening the Office of Environment and Heritage's (OEH) best-practice guidelines.

Cannes Reserve, Avalon

The camp at Cannes Reserve, Avalon, was dispersed at the end of July. However this coincided with the normal reduction in numbers of flying-foxes in the Sydney region – the Gordon camp was deserted soon after – so it's debatable how much was directly due to the dispersal activities and how much to normal seasonal movement. However, in October the bats returned – as has been seen in nearly every other dispersal attempt.

Pittwater Council then carried out 'maintenance dispersals' – which in operation are identical to dispersals, but allowed to be conducted at times when a normal dispersal is prohibited due to the stress on the animals and threat to pregnancies. Under pressure from a handful of local residents, Pittwater Council conducted dispersals even when dependent young were present in the camp – with the full approval of OEH. And in early November, Council conducted tree trimming at night, after the bats had flown out. This resulted in the severe pruning of 12 trees used as roost trees by mothers with young, and the effective destruction of the contiguous canopy in the camp. (The vegetation type is a declared Endangered Ecological Community – Pittwater Littoral Rainforest.)

The short-term result was that the flying-foxes moved into other trees, closer to the residents who had complained. How this situation can be resolved is unclear. At present it appears that the cycle will stop only when there is nothing left of the reserve, and the bats have moved somewhere else.

The next closest camp, at Warriewood, has been abandoned for months due to adjacent construction work; the next two nearest camps are Balgowlah – itself contentious and being proposed for dispersal; and Gordon.

Kareela, Sutherland Shire

At the same time, at Kareela in Sutherland Shire, a long battle with residents resulted in Sutherland Shire Council approving for full dispersal of that camp. This camp was only established after another camp – Kurnell – was abandoned during construction of the adjacent Sydney desalination plant. The Kareela dispersal was not approved in time for action to take place under the OEH guidelines (May to July) which are supposedly in place to minimise harm to the animals, so were approved to start in August.

The animals were quickly dispersed from the camp but moved to adjacent areas of bushland; they were then in turn dispersed from these. Eventually, the animals abandoned the area; it's not known where they have gone, but it's thought to be Wolli Creek. They have, of course, continued to try roosting in the Kareela camp. So Council staff have been conducting pre-dawn dispersals to prevent the camp re-establishing.

Like the Sydney Royal Botanic Gardens, they accept that this will be an ongoing action – probably for some years. The approved budget for this is \$800,000 to \$1.2 million.

Parramatta Park

The Parramatta Park camp is an interesting case – the camp is supported by both the local council and the managing body (Western Sydney Parks Trust). However a major development is planned for the area adjacent to the camp. This has been declared a State Significant Development so is out of the hands of local bodies, and proposes multi-storey apartment blocks sited just 50 m from the camp.

Out of Sydney

Further afield, there's talk of dispersing the camps at North Avoca, on the Central Coast; and at Rudder Park, Kempsey (a camp that formed after a previous camp was itself dispersed by construction of the Kempsey bypass). There's also a draft plan of management for the camp in Batemans Bay (which thankfully proposes *in situ* management rather than dispersal).

It seems that NSW is following the direction of Queensland regarding flying-fox management: hundreds of thousands of dollars of taxpayers' money being used on what are ultimately ineffective and pointless actions which at best only result in the problem being moved somewhere else – usually worse. Ironically, Queensland councils are now starting to realise this and are in some cases pushing back against resident complaints and trying to manage the issues rather than taking the knee-jerk action of dispersal. Sadly, many NSW councils do not seem to be getting the message.

Ultimately, however, what needs to change is community attitudes towards wildlife and nature – and the recognition that humans are part of the environment, instead of above it.

LATE SPRING IN THE SNOWIES

Two members of the STEP committee visited the Snowy Mountains in recent months. John Martyn saw plenty of flowers in late-spring but my experience in mid-January was that most of the flowering had finished. Traditionally January and February have been peak season for flowers. More evidence of climate change? John's perspective on his visit follows.

The Snowy Mountains have a lot going for them in all seasons, though the visitor bias is strongly towards the winter ski season or to hiking and wildflowers in midsummer. But what about the transitional seasons?

A couple of years ago we went down there in mid-February to see and photograph Mueller's snow gentians in flower: always late bloomers. And it sure was worth it! They are truly beautiful and of course endemic to the Australian Alps. But what about spring?

Spring Flowers and Snowpatch Flowers

What happens after the snow gradually melts and retreats to just the major drifts? Well, if you go down there in late-October to December, you'll see, if you're lucky, some of the snowpatch flowers.

Classic, and among the most beautiful of these, are the alpine marsh marigolds *Psychrophila introloba* (formerly *Caltha introloba*) whose flowers can actually open beneath the snow. Their quite large five-petalled white flowers, tinged yellow and sometimes streaked with purple, nestle among the tufts of their bright-green leaves in the soggy grasses watered by the snowmelt. We saw and photographed them on the edges of a melting snowpatch on the slopes of Mt Stilwell – easily reached via a walking track from the turnaround at Charlotte Pass.

But the queen of the spring flowers is surely the anemone buttercup *Ranunculus anemoneus* (pictured). This is not strictly a snowpatch flower and we saw it scattered across a variety of

grassy and heathy settings, and it's quite common near Kosciuszko Road along the last half kilometre to Charlotte Pass. As far as spotting them goes, however, it's fortunate that they flower before the main blooming season of the much more abundant *Celmisia* daisies, which display white flowers of similar size and colour.

The two flowers highlighted so far are both members of the buttercup family Ranunculaceae, and this family dominates alpine spring flowering. There are yellow buttercups of a number of species, scattered widely through the grasses and herbfields, or nestling in clumps. Snow buttercups *Ranunculus niphophilus* flourish and bloom actually in the meltwater of snowpatches. To us ex-Poms, the country above the tree line is strongly reminiscent of certain moorlands in Britain, especially Dartmoor with its granite tors, and to see buttercups everywhere in Kosciuszko reinforces this feeling. But let's tell you about another alpine gem and wonder.

Alpine Crayfish

It can be a bleak and challenging environment up there and we never seem to see a great variety of bird and animal life, so we were astonished to find crayfish claws and shells near the Mt Stilwell snowpatch at around 1950 m asl. The soggy turf and sphagnum with its trickling rivulets was peppered with holes, clearly made by these hardy creatures who must surely hibernate beneath the snow.

We never saw a live one in two visits in different seasons, but scouring the web turned up the likely candidate as a species of the genus *Euastacus* or spiny crayfish, of which there are 50, all endemic to SE Australia with 17 of them on the IUCN Red List.

The most probable one is *Euastacus rieki* as this species is recorded at the highest altitudes and is known to make burrows (not all of them do). However, its IUCN Red List entry quotes the highest recorded altitude as 1520 m and we found it at 1950 m – which is well worth exploring and investigating further.

Implications and Worries

All *Euastacus* species apparently require permanent water to survive, and this is traditionally available at Kosciuszko from snowmelt and from summer rainfall. Reductions in snowfall and progressively earlier snowmelts due to climate change must be considered a threat to these unique little animals.



NEW WEBSITE

A lot of work has been going on behind the scenes to set up our new website which will go live in the next month or two. A significant new feature will be the option of paying online when renewing your membership, making donations and buying our books and maps.

STEP INFORMATION

STEP Matters

The editor of *STEP Matters* for this edition is Jill Green, who is responsible for all information and articles unless otherwise specifically credited. The STEP committee may not necessarily agree with all opinions carried in this newsletter, but we do welcome feedback and comments from our readers, be they STEP members or not.

All issues (from when we began in 1978) can be viewed online, usually in full-colour.

Feedback

Send complaints, praise, comments or letters to secretary@step.org.au. Please feel free to share your copy of the newsletter with friends, neighbours and business colleagues.

New Members

New members are always welcome to join STEP and to make themselves available for the committee should they wish to do so. The effectiveness of STEP is a factor of the numbers of members we have, so please encourage your like-minded friends and neighbours to join.

STEP Committee

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